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OUR STATE FAIR.

The advertisement of our State Agricultural Society will be found on the 4th page of our cover. It is truly gratifying to hear the preparation making for this deservedly popular occasion. Nothing has been omitted by the most excellent Secretary, and other officers of the Society, to make it worthy the most abundant success. We predict it will be the largest and most interesting Fair yet held. Let all who possibly can, come to it.

THE ABBEVILLE DISTRICT FAIR.

The second Annual Meeting of the Abbeville District Agricultural Society will be held, near the Court House, on the 17th, 18th and 19th of this month. We attended its last Meeting, and was never more pleased at any similar exhibition. The grounds are spacious and well arranged, and the great zeal manifested by its popular and energetic President, Hon. J. Foster Marshall, seems to pervade the whole District. There were at least 2,000 persons in attendance—the largest assembly at any District Fair ever held in this State. We never saw a finer exhibition of animals, products of the farm, dairy, or in the Ladies' department, than was then exhibited. We can assure all it will be well worth a visit. It is our intention to be present.

VOL. XI. OCTOBER, 1860. NO. 10.

R. M. STOKES, Proprietor. COLUMBIA, S. C. NEW SERIES Vol. 2, No. 10

For the Farmer and Planter.

A LETTER FROM EDMUND RUFFIN'S FARM---THE PEA FALLOW SYSTEM, &c., &c.

Mr. Editor:—Having just returned from a visit of a few days in the neighborhood of Mr. Edmund Ruffin's late residence, on the lower Pamumky, I shall give you an account of what I saw and heard, believing that the system of farming now in practice in that section might be profitably adopted, in part, if not entirely, in some portions of our State.

Some years ago, the system very common in Virginia was, 1st year Corn, 2d Wheat, 3d Pasture, and repeat. Under this, many crops of wheat did not average 5 bushels per acre. In process of time, marl and clover were introduced, and the 4 and 5 field systems adopted. In the first, the order was, 1st year Corn, 2d Wheat, 3d Clover, sown in wheat and grazed, and 4th Wheat. The other differed only in having a 5th year of rest and volunteer clover, after the wheat. This latter was the system pursued on the Lower Pamumkey, until the pea-fallow was introduced by Mr. Ruffin, at Marlbourne, in '48, and adopted by others since. He at first increased his fields to 6, but as that rotation differed from the one now in practice (even at Marlbourne) only in having an additional year of rest, I will describe only the present. The 1st year is Corn, 2d Peas, broadcast in May or June, 3d Wheat, on the peas plowed in, 4th Clover, sowed in wheat in spring, and 5th Wheat, on clover plowed in. The great advantage is, that both fields of wheat come after a fertilizing crop, and the consequence is, that the average increase of production has been 50 per cent. on the only two farms of which I can speak with certainty; on the others, I suppose, from what I saw, that it was quite as much.

The corn, too, has been increased, as might have been expected, from the improvement of the land.

In an essay, by Mr. Ruffin, published in the Transactions of the Virginia State Agricultural Society, for 1850, is a table, from which are obtained the following average results of crops at Marlbourne:

Wheat	from '45 to '47	inclusive		13.49 bush.
"	" '48 to '57	"		20.04 "
Corn	" '44 to '57	"		26.39 "
"	" '52 to '57	"		35.91 "

Giving for the wheat an increase of 6.55 bushels or 48 per cent.; and for corn 9.52 bushels or 36 per cent; '48 was the first year the wheat came after peas, and '51 the first that the corn got round to the pea-fallow land. There was no wheat in '44.

The marl used is the so-called "Green Sand Marl," of the Eocene formation, containing, by analysis of Prof. Gilham, in '53, in 100 parts, carbonate of lime 31.19, sulphate of lime 0.23, bi-sulphuret of Iron 1.94, potash 0.61, soda 1.00, and phosphoric acid,* with some sand, alumina, and organic matter. As good results, however, have been obtained by the use of miocene marl, in Prince George County, and the opinion seems to be that lime is the most valuable ingredient, so that when stone or shell lime can be procured, its use would be quite as improving as that of the marl. On some of the farms this has already been done, in order to get more rapidly over the land; the marl being put at the rate of about 300 bushels per acre, requires much more labor than the lime, which is used in quantities varying from 30 to 60 bushels per acre. When the first

* In the analyses of '53, Prof. Gilham found only "traces" of phosphoric acid, but in '58, by improved process, he discovered it in quantities equal to bone phosphate of lime, varying from 1 to 7 per cent.

is used it is hauled into the field at any time it can be done during the winter; when the latter, the most approved plan seems to be to put it on the plowed ground just before sowing the peas; and then when the peas have attained some size, 1 bushel per acre of plaster of Paris is sown upon them, if possible, when the leaves are still wet with dew or a recent rain. With the green sand marl, plaster is not of much use, since it contains a considerable quantity of sulphate of lime already formed, and bi-sulphuret of iron, which, upon exposure to the air, in presence of the carbonate of lime, makes a still larger quantity. The green sand itself, or "Gypseous earth," as it is called, which immediately underlies the marl, is not so permanent in its effects, and requires lime to be used in combination.

Most of the lands in the neighborhood are alluvial. In some places clay is abundant, and the soil consequently quite stiff, but generally they may be considered as light. Both contain large quantities of mica—a very valuable ingredient where lime is used—but as was shown by the crops formerly made on those lands not capable itself of keeping up the fertility of the soil.

Until within a few years it was generally believed by the farmers that the less the clover was grazed the better, and they consequently often starved their cattle, or at least stinted them, in order to have as heavy a "ley" as possible. Experience has shown, however, that grazing not only benefited the animals, but improved the wheat; when not grazed the weeds in some places grew as fast as the clover —and even when it did not, the amount of vegetable matter (much of it quite dry) rendered the soil too loose and "puffy," subjecting the wheat to the injurious effects both of cold and drouth.

The general working of the farm is as follows :— The land is plowed and planted in corn as usual, on 5 feet beds, 2½ to 3 feet from hill to hill, and 2 stocks in each. This is done rather late in April. When about 4 or 5 feet high, at last working, which is after wheat harvest, peas are sowed in it for seed, either on the beds (which are always low) or broadcast. When this is done, thrashing occupies a few weeks, say to middle of August, then the clover is turned in, and after this the peas—good farmers preferring to finish the whole, so as to get in the wheat the latter part of September and first of October. In the winter the corn is gathered, marl hauled, and other improving work done. In the spring, clover is sown in the growing wheat. The peas are sown in the end of May and first of June. The varieties of peas used are the early Black and "Clay," which is our common cow-pea, I think. The Black does not give so heavy a growth as the other, but quite enough to cover the ground completely; and it has the advantage of ripening earlier, so as to allow enough to be gathered for seed and still be turned in in time for an early seeding of wheat. It would be better, of course, not to take any of the grain from the land, but this would add much to the expense of the system (from $1.50 to $2 or more per acre), besides the risk of sometimes not getting it at any price, so that the general custom is to gather about as much as is sown. These are taken from the first ripe portions, and the plows follow immediately after the gatherers, turning in the still succulent vines and leaves, and the ripe, but not yet dried, peas that are left. This is considered the best stage, as the plant has then abstracted both from soil and air all it would do, and is moreover in such a state as to rot, almost in a week, after being turned in, and so give up immediately all it has for the use of the wheat plants.

Since the grazing of the clover has been found beneficial, the system with the cattle is to leave them in winter in the corn field where the shucks are still standing, and afford them abundant food till spring—in cold spells they are carried up to the farm-yard. When they begin to plow up this field for peas in April, they are put upon a small permanent pasture, which is preferable, or turned into the woods, where they remain till about the first of June, when they are turned upon the clover, which is then quite high and well-rooted. In eating this they necessarily bite off much of the young weeds, and so keep them down. This field is open to them till the plowing under is nearly or quite completed; they have also the young clover of the other field as soon as the wheat is hauled off to be thrashed. Here they destroy even more weeds than in the other, and it is supposed that the clover grows better for being trampled and grazed lightly, as is the case, for besides these two fields they have that which is to be put in the corn next spring; which has, besides some grass, more or less volunteer clover. These two they do not get as early as the old clover, on account of the shocked wheat, but they run upon them till the corn is removed to the barn, when they are put, as I said, into that field. Thus, with the exception of six or eight weeks, from middle of April to June, they have abundant pasturage, and the effects are very perceptible in the improved breeds now seen. Those who have not cross-fences are obliged to pen the cattle every night, and often in winter keep them up altogether. This is, of course, not so good as having fences.

Generally, all the bacon that is required is raised

on the farm; the only difference between the treatment of the hogs and that of the cows and sheep is, that they are allowed the run of the pea-fields between the gatherers and the plows. They do not take off a great deal, and it gets them in good condition before they are fed on corn in winter.

In conclusion, I would say, that, to my mind, there is no doubt of the advantages of the pea-fallow system, as I have just described it; for though the extra plowing in the spring for the fallow crop would require a slight increase of team or more pushing of the old, the increase of the crop immediately and the improvement of the land permanently, much more than counterbalance this objection. I will, therefore, not urge its claims upon the attention of our planters, but leave the figures to speak for themselves to every one who has access to marl or can procure lime at anything like a reasonable price.

ST. JULIEN'S.

For the Farmer and Planter.

COTTON SEED ON CORN.

Mr. Editor:—An inquirer, in your issue of August, under the signature of "Onward," desires information on the proper application of Cotton Seed to Corn. I have had ample experience on this point, and will be glad to assist him. If my success is any indication of the best mode of using this most valuable manure for corn—far superior to guano, super-phosphates, or anything else—then it will be well for him to go and do likewise. I will take this opportunity to indicate not only my mode of applying the seed, but also how I manage my crop, which I consider an improvement on the old style. The best evidence of this improvement is, that I have not bought a grain of corn since adopting it—whereas, previous to doing so, it was unfortunately a common occurrence. I think "Onward" right, when he advocates the application of the unkilled or fresh seed, rather than the killed seed, to his corn; but wrong, when he allows it to come up at all, although he covers it up, so as to kill it effectually, as soon as it vegetates. But to my plan.

In February, or first of March, I run two furrows in the alley, as deep as the turning plow will go, into which the unkilled seed is *regularly broadcasted* (this is important), to the quantity of a peck of the seed to the task-row, of 105 feet. I then list with the hoe, though it can be listed with the plow. The advantage of the former plan is, all the stubble, grass-seeds, and refuse matter is turned deep under the surface, and the work looks better and the fields cleaner. Putting the seed in so early and so deep ensures its entire destruction. It there rots, and lies just where the corn radicles will get it all. The first few roots of the corn, striking down, get into the decayed seed, which gives the corn an early start; other roots penetrate it as it needs it, and the corn is kept in a flourishing condition, until the time of earing, when the whole benefit of the seed is got, by the innumerable radicles sent off in search of food at that critical time. The above quantity of seed will, on fair lands, ensure you 18 or 20 bushels in an ordinary season, and in better lands, a larger yield. Other advantages of this plan are, all further trouble of manuring is at an end; the *corn never fires*, especially if worked every 10 or 12 days, and you get all the fodder. All my barns are stocked with old and new blades, when many of my neighbors have lost most of their's this season, and indeed most generally.

But to return from this digression. Just before planting, a couple of furrows are lapped on the list, and the corn is planted two feet apart, one stock in a hill. When the corn is up, the middles are plowed out, and in ten days time, a furrow is run as near the corn as is safe, throwing the earth away from the corn; in ten days the narrow ridge left is worked with the hoes; that is deeply hoed and thoroughly pulverized—this is also important. Here I give 4 to 6 acres to the hand. In a few days, or a week, according to the seasons, throw the earth back to the corn, taking care not to cover it. Four furrows will be necessary to do this. In ten days more, put the plow *into* the bed, and with a light furrow, lap the earth a little on each side; or, in other words, hilling, but not banking up the corn. A second furrow is now to be laid in the trench made by the first furrow. Now plant peas, and in ten days, when up, and the corn heads for tasseling, break up the *middles* deeply with two furrows, and haul up with the hoes, and lay by the crop. The peas may need a brushing over, when the corn is made. By this plan the hoes go but once-and-a-half into the corn, the earth is thoroughly pulverized, and the grass never gets ahead.

This has been my plan for years, and I have had no reason to change it.

While my pen is in hand, allow me to recommend to my brother planters a moveable pen, for enclosing cattle, which I have found of great advantage. It is made in the following way: A large carpenter's saw-bench is made, to stand 4½ feet high in the upright, after the legs are *well* spread, which braces them all the better; each pannel to be 10 feet long. Upon one pair of the legs of the same side, 2 or 3 slats, according to the necessities of the pen, are

nailed at equal distanees from the top rail. Forty of these are made after the same pattern, which will enelose (nearly) the task. They are placed in apposition, 10 on a side, with the slat of the bench facing the pen. I make this pen with scantling stuff, 4 by 4, for the horizontal pieee, and the legs are made of anything convenient. This is a safe pen, not easily blown down by winds, nor thrown down, nor jumped over by cattle; is easily moved in two hours or less, by one man; and if made of good stuff, is a durable pen. I find it is a useful pen to run over my land for potatoes and slips, and after they are planted, to continue it during the summer over land for the next year's erop. Moving it every day, for four months, after the planting of slips, will give me about 30 aeres of land well manured and fit for any crop. This ought to be listed up in the fall. I pen about eighty head of cattle.

Respectfully yours,

L. M. D.

From the Charleston Courier.

SOUTHERN WEALTH AND NORTHERN PROFITS.

Flat Rock, August, 1860.

Editors Courier:—In former years it was my practice to seek relief from the toils of busy life and refreshment for the approaching period of the business season, by visiting the North, and "getting the most for my money," but the events of a few years have proved to me that "absenteeism," and spending of our surplus incomes for what is termed pleasure trips, are consuming the life-blood of our Southern country. No one is more convinced than the the writer of the neeessity of refreshment and invigoration of our bodies from the effeets of our warm elimate, but why eannot this be done by a large portion of our native people in the upper part of our own State, North Carolina and Georgia? They each present many delightful resorts. The reply is that the want of aeeommodation and of proper fare is too great. Let it be granted that it is so to a great extent. If, however, one-half of Southern wealth, which has been expended in the erection of handsome edifiees at Newport, and other Northern resorts, and in luxuriating in Northern hotels, had been spent in the improvement of Southern resorts, where elimate is delightful and the fruits of the earth abound, we should have been a far more independent people than we are, and be possessed of all those eomforts. It is with deep regret that the writer has witnessed the departure of Steamer after Steamer for Philadelphia, New York, and even Boston, which have taken large numbers of our people, with their surplus earnings and incomes, to lavish them upon a section of our country, ready to destroy us for "an idea," while the hotel at this plaee, capable of holding fifty to sixty persons, has scareely more than a half dozen.

With a delicious atmosphere, thermometer ranging from 65° to 82° generally, with an abundanee of fine fruit of every kind, poultry and meats, with scenery beautiful, and in places grand, and with exeellent and hospitable society, we find the plaee passed by or not resorted to. This is not the only place in this neighborhood which presents great inducements. Cæsar's Head, with its wild scenery and its exeellent fare; Table Rock, with its imposing grandeur; Lane's Hotel, nine miles north of Flat Rock, with its excellent fare and attentive host, all present inducements to our Southern people to stay at home, at least while this state of sectional malice exists against us and our institutions.

While enjoying the delightful elimate and comforts of this pleasant Summer resort, a friend placed in our hands a book, whieh, for a concentration of important statisties, renders it a valuable one for every individual's library. I allude to "Southern Wealth and Northern Profits," prepared by Mr. Thomas Prentiee Kettell, late Editor of the *Democratic Review*.

The "facts" and admirable mode of arranging them, so that they ean have a telling foree upon all his arguments, the amount of statistical information embodied in it, with the admirable and powerful extracts from a number of prominent political writers, render it a remarkable book.

No reader ean peruse it without feeling guilty of the folly of believing the thread-worn story of our dependenee upon the North for hay, manufactures, &c., and the fallacy of the idea that slave labor is adverse to the spread of the manufacturing interest.

This admirable writer, to whom the South should be much indebted, not so much for the information imparted to our fanatically blind neighbors as for opening our own eyes to the fact of our independent condition, and of our ability, after a short period, of even doing without them entirely.

He, in his preface, page 4, writes "while popular eontempt for slavery is stimulated by such assertions as the following: 'The hay crop of the free States is worth considerably more in dollars and cents than all the cotton, tobaeco, rice, hay, hemp, and eane sugar, annually produced in the fifteen slave States.'"

When we find that the South keeps 3,000,000 head of cattle more than the North, without this vast expense of hay-making, the absurdity of this proposition becomes apparent, and we recognise the hobby of the nursery:

"His head was made of peas-straw,
His tail was made of hay."

On pages 44, 45, 46, 47 and 48, he still further shews, from the authentie statistics of the country, the fallaey of the foregoing assertion, and proves incontestibly how prominent a condition of *independence* the South maintains in reference to some of the important articles of sustenanee, and even with respect to manufactures she occupies a very respectable position, and when compared with the "free labor" States of the West, even a superior one.

But let Mr. Kettell speak for himself:

Pages 44 and 45 shew that the eombined production of grain by the North and West do not equal that by the South alone—

That of the South being	$307,328,112
That of the North and West being	305,768,963
Shewing a difference in favor of the South of	$1,559,149

If you include the value of all the productions of the soil, of the different sections, even the most vaunted hay and butter productions of the North being added, the excess of the North and West over the South does not amount to much—

That of the North and West being	$541,665,727
That of the South being	528,571,103
Difference in favor of the North and West is	$13,094,624
And to carry out the illustration still further you add the value of "live stock," which, for the South, amounts to	$253,795,330
And for the North and West amounts to	286,376,541
They can then only boast of the following total, viz: the North and West combined	828,042,268
The South	782,134,954
Excess in favor of the North and West	$45,907,314

But, even at the risk of making this article too long, may I ask the favor of your allowing the intelligent editor of the *Review* to speak for himself, as follows:

"If now—supposing that the black laborers raise the Cotton, Sugar, Rice and Naval Stores (that is, leaving out the value of these articles as their portion of the production)—we compare the aggregate agricultural products in the above tables (pages 44 and 45) with the number of white persons employed in agriculture, according to the same census, we have the relative production as follows:

	Number employed in agriculture.	Value of Product.	Per Hand
North	823,171	$295,568,699	$359
South	849,285	409,030,077	481
West	728,127	246,097,028	335
Total	2,400,583	$950,695,804	

This gives the absolute fact that the West, a peculiarly agricultural section, with a very prolific soil, produces a value per hand employed, less than even the comparatively sterile soil of the North and East. This strongly illustrates the fact to which we have previously alluded, viz: that free labor, even with the fruitful soil of the West, unaided by machinery, can produce no surplus.

"These figures unexplained, however, embrace a fallacy, and one which has attracted much attention of late. It is that the Northern and Eastern section has included in its aggregate $94,736,000 worth of hay, which article, if deducted from all the accounts, would leave the Eastern production less per hand than any other section. This crop of hay has, however, been vaunted as a crop of great value, even as 'rivalling Cotton' in magnitude, and offsetting that crop in its importance as a national product. This view of the subject is more specious than real, however. The object of making hay is to cure grass, so that it can be transported to cover and feed cattle through those vigorous Northern Winters, which prevent the cattle from seeking their own food in its natural state. Where those Winters do not exist that necessity does not arise, but the cattle have not the less food. The making of hay is, then, not a valuable labor; but an expense in the keeping of cattle imposed by climate. Accordingly we find, as we proceed South, the Winters being shorter, less hay is made, in proportion to the number of cattle kept. In Maine, 755,889 tons of hay were made, and there were 385,115 head of cattle and horses to feed. This is a ratio of nearly two tons per head. In Illinois, 601,952 tons of hay were made, but 1,190,264 head of cattle were kept, or rather more than half a ton per head. In Alabama, 32,685 tons of hay were made, and 915,911 head of cattle kept, or about one ton to thirty head of cattle. In the aggregate, the hay crop of the country, and the number of cattle kept, was as follows:

	Number Cattle.	Tons Hay Cut.	Pounds per head.
North	5,460,820	9,473,605	3,460
West	5,161,895	3,227,253	1,260
South	13,475,689	1,137,784	170
	24,098,404	13,838,642	

"This crop of hay, therefore, is a tax upon the labor of the Northern farmer, proportioned to the number of cattle he seeks to Winter, and the rigor of the Winter he has to 'provide for,' thus showing the labor, which, at the North, will give one hundred millions of hay, will, at the South, not being needed for that purpose, give one hundred millions of Cotton, while the cattle are feeding themselves. It is for this, among other reasons, that the aggregate productions of the South, are so much more per hand, than at the North and West."

It will be borne in mind that in estimating the amount per hand of white laborers, the articles of rice, tobacco, sugar, naval stores, and cotton, were left to be represented by the slave laborers. The editor, therefore, goes on to say that "it (the South) supplies the wants of the North in naval stores, rice, tobacco, sugar, hides, wool, cotton, and annually swells the aggregate exports of the Union to foreign countries," and he annexes a table (page 48) which shows that the value of the above named articles per head has increased from $16.10 in the year 1800 to $51.90 in 1851, and $65.64 in 1859, and will no doubt be greater than all in 1860.

On page 57, he shows, by extracts from the statistics of manufactures, prepared by the Secretary of the Interior for Congress, 21st January, 1859, that while the value of manufactures at the North has wonderfully increased during the interval from 1840 to 1860, to a very large amount, that of the South has nearly doubled itself, having increased from $93,562,202 to $164,579,937, being still greater than those of the West, which was $138,780,537. He therefore remarks, properly, "the South, it appears, is not so entirely destitute of manufactures, as the popular mind has been led to believe."

Page 58 shows the number of mills, their products, &c., in the three sections of the country.

Page 59 enumerates seventeen principal articles of manufactures; "of the aggregate of these seventeen leading articles, the South manufacture 50 per cent. more than the West. In clothing of all kinds the South exceeds the West in the manufacture.—But in the article of *Rum*, the West seems to have the advantage. Whether that manufacture, like that of *hay*, is to be taken as an indication of superior thrift, or morality, or philanthropy, in the free labor section over the slave labor section, may be determined by the disposition of those who have the matter under consideration."

Page 62 shows that of the white population the

North employs in manufacturing one in 41, and the West one in 40, being nearly equal.

Now, Messrs. Editors, with these facts before us, of the extent of which I confess myself ignorant until I read this valuable book, we need feel no doubt as to our ability to provide all necessary articles for ourselves, and, if requisite, do as our forefathers did: "The Colonies, therefore, determined to wear no more English (Yankee) cloth, but to manufacture for themselves, and homespun became the fashion." But I will close this long article with only one more extract:

"It is certainly one of the most extraordinary spectacles of the age to see a great, intelligent and manufacturing people voluntarily permitting a few political aspirants to attack their best customer, and seek to destroy his means of purchase, and merely for a chimera.

"The French Emperor has proclaimed that France alone 'goes to war for an idea,' but America presents the spectacle of a people who go to destruction for an 'idea.' That political party which threatens with fire and sword every Southern hearth, with violent death every Southern man, and with dishonor every Southern female, amidst saturnalia of blood, receives countenance from merchants whose trade depends upon the good will of their threatened neighbors, and yet vainly hope that they will continue to buy Northern wares, and make no efforts to prepare for that hour which the tendency of that party, for the last thirty years, makes inevitable."

A Traveler.

From the Country Gentleman.

AGRICULTURAL CHEMISTRY.

BY PROF. S. W. JOHNSON.

THEORY OF MANURING.

When the soil is deficient in one or all of those ingredients which favor the growth of the plant, and is consequently unable to produce a remunerative crop, the deficiencies may be supplied and the soil rendered productive by the use of manures. Manures are, in general, refuse, or very cheap matters, which contain some or all the elements of vegetable nutrition, and may therefore be profitably employed by the farmer, for conversion into useful and valuable agricultural products. The principles on which manuring depends are the following: 1. Plants require various kinds of solid mineral matters, and derive the same exclusively from the soil. 2. Some plants which in the natural state derive the gaseous elements of their organic structure, viz: carbon, hydrogen, nitrogen, and oxygen from the atmosphere, must be supplied with more or less of these matters from the soil, in agricultural production.— 3. Different plants require different proportions of these substances, in order to luxuriant growth. 4. Different plants require different quantities of these substances to mature a full crop. 5. Different plants, from peculiarities of structure, draw differently on the same stores of nutriment. 6. Different soils abound or are deficient, to a greater or less degree, in one or many needful ingredients of the plant. 7. The same soil has a different composition in different years, caused by the removal of matters in the crops, or by the increase of available food from weathering (tillage). The substances usually classed together as manures, may have three distinct functions: 1st. They may chiefly serve to improve the physical characters of the soil. Such are some manures that are applied in large quantities, as lime, marl, organic matters. 2d. They act partly as solvents, or absorbents, and thus indirectly supply the plant with food; e. g., lime, gypsum, salts of ammonia. 3d. Finally, they may enter the plant as direct nutrition. If manures acted merely as direct nutrition, the theory of their operation would be very simple. It would then be possible to judge of the manuring value of any substance, by comparing its composition with that of the ashes of cultivated plants; but since many fertilizers produce all the above-mentioned effects, the question becomes a more complicated one. Notwithstanding the vast mass of facts which practice has accumulated concerning the action of a great variety of fertilizing substances, and although during late years scientific men have devoted much labor to the exacter study of their effects, we are yet in the infancy of our knowledge respecting them. In agricultural periodicals are reports of thousands of experiments on the value of manures; we find, however, the most conflicting statements, and a chaos of results. There are authentic instances of nearly every proposed fertilizer increasing crops, and as many instances of failure. Farmers, however, continue to experiment as if there were a possibility of proving, that for each kind of crop, or each variety of soil, there is a specific and unfailing fertilizer. The principles above stated, taken together with the fact that the physical adaptedness of soils to crops is indefinitely varied and constantly changing, demonstrate that there can be no fertilizing panacea.— They likewise make evident that what is this year a good application for a certain crop and soil, may fail to manifest any action next year; and that what is now inefficacious, may prove highly useful at some future time. The most generally useful manures are those which contain the largest number of ingredients, and which present them to vegetation in the greatest variety of forms. Stable manure occupies the first rank among fertilizers, because it contains everything that is needful for the nutrition of plants. It is in fact the *debris* of a previous vegetation, and contains all the ingredients of plants, though in proportions altered from the original ones, and, indeed, advantageously altered. The hay, roots, and grain, which mature cattle receive every day as food, are in part digested and assimilated, but since full-grown animals do not increase in weight, unless fattened, they excrete daily as much as they ingest. Those portions of their food which are most easily combustible, are, in consequence of the respiratory process, exhaled as water and carbonic acid gas; while the ash ingredients, and the larger share of the nitrogen, are accumulated in the excreta. In this way there is a concentration of those constituents of the animal's food, which, after they have served their nutritive function for it, become the proper food of the plant. To mention merely all the numerous substances used as fertilizers, is foreign to the purposes of this

article; while any detailed accounts of the effects, modes of action, and the methods of preparing them, would far exceed our limits. Among the various ingredients of manures, two in particular have acquired a special significance in late years, viz: phosphoric acid and ammonia. These bodies are commercially the most valuable of all fertilizing substances, a necessary result of their scarcity; and in general, phosphoric acid is a smaller ingredient of cultivated soils than any other of the components of the ash of plants. Ammonia, especially in the form of carbonate, not only powerfully stimulates vegetable growth, but it probably exerts a strong solvent effect on the minerals which compose the soil. Hence, guano and other animal manures which contain or yield much ammonia and phosphoric acid, are in such large demand among those who practice "high farming." But the exclusive use of fertilizers, which supply to vegetation only a small portion of its ash ingredients, must sooner or later be found inadequate to produce profitable returns—must, in fact, reduce the soil to a minimum of fertility. The true system of manuring is to maintain a supply in excess, of all forms of plant-food, and indeed of all materials which experience proves to have a good effect on vegetation, whether this effect be chemical or physical.

When chemical analysis first demonstrated that different classes of plants yield an ash of different composition, the idea of *special manure* had its origin. By special manures, were meant mixtures containing just the quantity of each ash ingredient removed from the soil, by an average yield of each crop. But investigation has demonstrated that there are in general no practical advantages in these attempts to feed the plant by ration. Latterly, Lawes and Gilbert, of Rothamstead, England, believed to have established by a multitude of field experiments, that ammonia is specially suited to the production of wheat, and phosphoric acid to the growth of turnips; but there are other equally authentic trials, which as fully prove just the reverse, and while on a certain soil, and under a certain set of circumstances, experience may, without difficulty, establish a rule, as has been done a thousand times; science is not yet far enough advanced to lay down a universally applicable principle or law, concerning the special nutrition of the various classes of cultivated plants.

ROTATION OF CROPS.

It has long been a settled fact in agriculture, that the greatest return from the soil is generally secured, not by continuously growing one plant, even though it command the highest market price, but by an alternation or rotation of crops. There is no difficulty in cultivating any agricultural plant successively for any number of years on the same ground, provided enough be expended in putting the soil into the right physical and chemical condition. But such a procedure is usually more expensive than alternating the crops. The reasons of this are mostly contained in what has preceded, but a few words of explanation may still be useful.—When a light virgin soil comes under the hand of the farmer, it yields good crops for a few years, but then subsides to a low state of productiveness. At first it may have yielded wheat; when no longer able to support that crop, it may still give fair crops of barley; the next year, if put to turnips or potatoes, it may seem to recover its fertility somewhat, and produce a good burden of roots; but now it will not yield again a good crop of wheat, though probably clover would flourish on it. The causes of such facts lie partly in the soil, and partly in the plants themselves.

As for the soil, as already stated, its composition and texture are perpetually changing. The quantity of organic matter especially, rapidly diminishes when the soil is under cultivation, and the soluble mineral matters are in most cases removed by cropping, faster than supplied by weathering or disintegration. As for cultivated plants, practical men have classed them according to their demands on the soil, as follows: Enriching crops, clover, lucern, and esparsette. Non-exhausting crops, peas and beans, also cereals when cut green. Exhausting crops, cereals, beets, turnips, carrots, and potatoes. Very exhausting crops, tobacco, flax, hemp, and hops. Among the causes of the different exhaustive effect of various plants, are the following: 1. Different extent or structure of roots and leaves.—The enriching crops expose to the air an enormous surface of foliage, and throw out very large, long, and numerous roots. The cereals have much less leaf and root surface. 2. Different rapidity of growth. Clover and root crops continue in foliage during the whole season; while the cereals ripen in July or August. 3. Periods or crises of growth; seed production. Plants which ripen seed, require a better soil than those which only produce foliage, because the rapidity of assimilation seems to increase when the reproductive function comes into activity. Plants which ripen seed, may require a richer soil, not because they remove more from it, but because they need more in a given time. 4. Some crops are entirely removed from the soil, as flax; while others leave the ground filled with an enormous mass of roots, as clover; or strewn with stalks and foliage, as the potato and beet. 5. The quantity of ash ingredients removed from the soil by different plants, is widely unlike. In the light of the above statements, it is easy to see that when a soil refuses to yield remunerative crops of shallow-rooted and quick-growing wheat, it may still produce a luxuriant growth of deep-rooted, large-leaved, and slow-growing clover. It is evident, too, that when a clover-ley is broken up and sown to wheat, this grain may yield well, because the decaying turf and roots are a ready source of every kind of plant-food. This preparation of the soil for an exhausting crop, by the intervention of one of easy growth, is shown in the practice of green manuring, which is, in fact, a rotation of crops; but is also a fertilizing process, because the first crop is entirely sacrificed for the sake of the succeeding ones. Green manuring consists in plowing under clover, buckwheat, spurry, or other crops, when in blossom, so that the soil shall be enriched by their decay. As these plants (the last named especially) will grow on poor soils, it is possible by their help to reclaim the lightest sands, and bring them up to a fair degree of productiveness in the course of a few years.

From the Independent Press.

LETTER FROM HON. J. F. MARSHALL.

ABBEVILLE, Aug. 8th, 1860.

GENTLEMEN:—In response to your letter of the 4th inst., requesting me to give you such suggestions in reference to the scarcity of provisions in our District, and what steps ought now to be taken by the farmers to provide against the scarcity that may be expected for the next twelve months, I beg leave to submit the following:

It will be remembered, that we have had, with the present year, three consecutive dry years, each one proving more disastrous to the agricultural interest than its preceding year, and the effects of our present drought threatens to make the prospect for a provision crop for the next year more gloomy than the past. There are some localities in the district which have been blest with a few more showers than others; but these are few compared with the whole area of the district. There cannot, under the most favorable view of our condition, be made more than *half crop* of corn, and in some sections not more than a third of a crop. The wheat and oat crops have been nearly consumed in the support of our farms for the last three months—necessity and hunger will, I fear, drive us into our cornfields before the corn is ripe, and hence the scarcity that now prevails over the land, and will prove worse for the next twelve months to come, unless the farmers will now, while it is time to prepare for the future, make greater exertions than they have been in the habit of doing for the last ten years.

The farmers of this District, and I may say the entire State, have been relying too much upon their corn and cotton crop to supply them with provisions; and paying but little attention to the fall and winter crops, which may be cultivated with great success. Too little attention is paid to the sowing of wheat, oats, barley and rye. These cost less labor and expense than any other crop planted in the Southern States, and will pay more for the labor and capital expended, in the support of our farms, than any other crop.

Unfortunately, however, for the cotton States, every planter has come to the conclusion that he is not increasing in wealth unless he has a large cotton crop for sale. It makes no difference with him, how much corn, flour, or bacon he may have to buy for the next year, so that he has a large crop of cotton per hand to brag on at the end of the year. Hence, to attain these large results in cotton, the richest land, the best manure, and costliest fertilizers, are all made to contribute to this grand *desideratum*. If wheat, oats, or barley are thought of, they are put in the poorest ground, in a slovenly manner, and, in nine cases out of ten, without the least manure, and not in due season. Hence the present scarcity, and worse prospect for the next twelve months, unless the farmers change their present ruinous system of planting all cotton and corn and paying so little attention to the small grain crops.

The first thing that claims our attention is, how are we to fatten our hogs on something else than corn? This can be easily done on *turnips*, *peas*, *potatoes*, and a little corn, if the seasons should yet prove favorable for these crops. An acre of turnips should now be sown for every *twenty* hogs to be fattened. Give your hogs the benefit of the pea field until the last of October; put them in a pen with a large trough through the middle; get an eighty gallon kettle, and put a rock or brick furnace around it, and cover with an open shed.—This is all that is wanted for twenty hogs. Put into the kettle *five* bushels of turnips, and any other vegetable you may have to spare, and cover with water. When nearly done, stir in half a bushel of corn ground into hominy and a handful of salt.—When done, turn into a slop tub to cool. Refill the kettle with the same ingredients, and if you have any peas they can take the place of corn.—Slop the hogs night and morning, and have plenty of water handy; and at the end of thirty days you will have your hogs fattened like Kentucky hogs, on *one acre* of turnips and *thirty* bushels of corn. This experiment I proved last fall upon ten hogs, and can be relied upon as the cheapest and most economical plan of fattening hogs.

The next thing I would recommend is the sowing of *one acre* of barley for every four horses to be worked on a plantation. This should be done on the richest land, and at three separate sowings; one-third in September, one-third in October, and one-third in November. This will be ready to cut in March, April, and May. It can be cut and fed from the milk state until the beards get hard. After that it can be thrashed and ground, and the meal mixed with cut oats, or any other kind of provender. Work horses thrive well on this kind of food. No crop of small grain pays so well as barley. It has yielded in this State fifty-six bushels to the acre; and to attain the desired result, I would recommend the application of 200 lbs of Peruvian Guano mixed well with 200 lbs of Plaster or Gypsum. If you cannot get Plaster or Gypsum, get Whitelock's Fertilizer, as all other standard manures are not worth so much leached ashes. I have tried nearly all of them during the last three years, and with one or two exceptions, they are the veriest humbugs of the age. Throw them aside, and make your own fertilizer with equal portions of Peruvian Guano, Lime, and Gypsum.—This compound will give you larger results for the money expended than any of the fertilizers now offered for sale in the way of "Manipulated" or "Standard Manures."

I would also recommend the sowing of one acre of the Egyptian or Black Oats, and one acre of Alabama, or any other early wheat, for every horse and mule to be fed on the plantation. Sow the oats early in October at the latest period, and the wheat in November. Oats sown in November and December cannot stand the severe freezes, and hence the failure of our winter oats. If you cannot sow in October better sow in January, as the oats sown in that month have done better than in February or March. Manure with 20 bushels of cotton seed per acre, and you will have a fine crop of wheat and oats to feed with as soon as you have finished your barley. My crop this year was cultivated by mules fed on wheat and oats from May until the present time, and they are now fatter

than when I used to rely entirely on corn. Don't forget the barley and rye patches for the ewes and lambs, and milch cows, during the winter and spring months.

There are many improvements in our root crops which ought and must be made by the farmers of our district. This crop, like that of the small grain, has, in a great measure, been neglected, for the all-absorbing crops of cotton and corn; but it is to be hoped that the experience of the last three years will cause every friend of agricultural improvement to pause and reflect upon our present condition and future prospects. If we want to avert in future the present scarcity of provisions, let every farmer who is relying upon his cotton and corn for a support change his policy, and plant more small grain and less cotton, and manure it better, and my word for it our horses, mules, cattle, and hogs, will be fatter, our barns better filled, and, as a necessary consequence, more nett cash at the end of the year.

I will add a word for those who have become alarmed at the idea, (industriously circulated,) that corn will be worth, next spring, from $1.50 to $2.00 per bushel, and flour form $10 to $12 per barrel. Although the scarcity of provisions for another year will be severely felt in the cotton States, (Florida excepted), yet, under the blessings of a kind Providence, the storehouses of the North-Western States are filled to overflowing. Such a crop of wheat and corn in the States of Ohio, Illinois, and Indiana, is not within the memory of the oldest inhabitants. Wheat is selling in Ohio at from 45 cts. to 50 cts. per bushel, and corn from 30 cts. to 35 cts. per bushel. This crop is now finding its way to the Atlantic ports, and in two months more those ports will be filled to overflowing.—Mixed corn does not command now more than 62 cts. per bushel, and flour $5.25 per barrel in New York, and with a fair prospect of still going lower. This corn can be delivered in Charleston at from 75 cts. to 80 cts. per bushel, and 20 cts. more will lay it down at Abbeville C. H. In Charlotte, N. C., and Spartanburg, S. C., corn is selling now at 80 cents per bushel, and twenty cents more will lay it down here, sacks excepted, or returned at the pleasure of the purchaser. So we need not apprehend any great scarcity, provided we are active and energetic in husbanding our present resources, and not wait for the evil day to come upon us unprepared.

I would, therefore, suggest to the capitalists of the District to come forward and contribute of their means, money for the purpose of relieving the wants of those who have not the means at this time of purchasing corn. Let this money be placed in the hands of an agent, to purchase in New York, or nearer home, if practicable, some 25,000 or 30,000 bushels of sound corn, and have it shipped in bags (not in bulk) to Charleston, and from thence by railroad, delivering it at the different depots in the District as required. In this way I believe that from 30 to 50 cents per bushel may be saved to the citizens of this District, from what will be the price next Spring, if we have to depend upon our home markets for a supply. For this purpose I will contribute $1,000, and more if necessary, and invite my fellow-citizens to this plan of relief.

I would add in this connection that, in all probability, there may be distress and famine in our State for the next twelve months, and it becomes the members of the Legislature to wisely and carefully consider whether the State ought not to contribute something toward the relief of the poor of the land.

In 1838, she contributed $2,000,000 towards the relief of the citizens of Charleston, when their city was laid in ashes. Why may not the same aid be granted to those of her citizens who have not the means of purchasing provisions for the support of their wives and children?

In conclusion, I would say, now is the time for our railroads to act with liberality, in bringing grain and flour to the people of the State. By reducing the freight 3 or 4 cents per bushel on every road over one hundred miles in length, it will induce the people to purchase abroad more extensively than they otherwise would do, and thereby contribute much in relieving the country of the anticipated distress. Had our contemplated railroads been completed, there is no calculating the saving they would have been to our people in furnishing the corn, flour and bacon we have been compelled to buy in Northern markets. I believe the excess in price will amount to $2,000,000, which amount would have completed either of the contemplated roads. Shall this amount be annually abstracted from the people for the want of an outlet to the Tennessee Valley? Let the people ponder well upon this all-important subject, and demand these railroads at the ballot box next October.

Respectfully,
Your ob't serv't,
J. FOSTER MARSHALL.

To Capt. D. M. Rogers, and others.

From the Ohio Valley Farmer.

CULTIVATION OF CORN.

BY H. J. COX.

The large crop of corn, reported at the Indiaan State Fair, last year, and the method of its cultivation, as stated by Mr. Rabb, who raised it, has started the inquiry, "How shall we increase the average corn crop?" It is quite true that all need not expect to raise 214, or 174, or 150, or even 100 bushels, but we all may raise more than the present average. How shall it be done? I propose making a few suggestions.

In the first place, it is necessary that the ground be as rich as possible; if so naturally, all the better, but if not, make it rich, by the addition of whatever is within reach. It is better to manure *liberally a few acres*, than to apply but a thin covering and attempt to work a large number of acres.

You may raise the same number of bushels off five acres, heavily manured, that you can from ten acres with the same quantity of compost spread over the whole ten. There is a decided saving of labor by working well and manuring well the five acres.

The plowing should be done as early as possible in the season, and it should be *deep*, and followed with the subsoil plow. The idea of the fogy agricultural editor of the *Gazette*, that "deep plowing is

but deeper exhaustion," is simply absurd, and his advice is not likely to do much harm, after the handsome dressing it received from this same friend Rabb.

An experience of twelve years, in attempting to resuscitate a worn-out farm, that had been worked upon friend Bollman's plan, has satisfied me that *shallow plowing is a speedy and thorough exhaustion*, and if deep plowing *is deeper exhaustion, it is a much slower process.* For corn, therefore, plow deep.

As soon as the first to the tenth of May, plant in drills, three feet or four feet, if your land is not very strong, twelve inches apart in the row. Or three feet both ways, leaving three stalks to the hill, will insure a large crop. It is important that a proper number of stalks be allowed to stand to make the crop you desire. For this purpose make an estimate of the number of rows and their length in feet. If you plant in rows three feet apart and nine inches in the row, which you may do in very strong ground, there will be 19,360 stalks, and if 100 ears make a bushel, the yield will be 193 bushels. This estimate will allow a large margin for nubbins, &c., and then be far above the present average.

But the cultivation is important. It is true, if you have fine soil you will scarcely fail to have a good crop, cultivate as you may; and yet, by a proper method of cultivation, you will so increase the amount as to astonish yourself.

The great premium crop of Indiana was first plowed six inches deep, next four inches, and lastly two inches, as reported in the *Ohio Valley Farmer*, by the man who raised it. Now, evidently, the most important thing is to preserve the roots of the plant entire, and the next to keep the soil loose and mellow. Hence, the first plowing may be deep, and should be, if the ground has laid some time after being plowed, before planting, for the roots are now small, and the plow cannot disturb them; but the after-plowings must be less deep in order to avoid the roots.

This is really and properly surface-culture, taught and practiced by Judge Buell, twenty years ago.—In this there is no hilling, no tearing of roots, no bruising of stalks by close plowing, but the ground is kept loose, clean and level. The number of times it may be proper to go through the corn, must be determined by the condition of the ground.

If it is clean, loose and level, when the corn is three feet high, it will need but little attention afterwards, unless the ground is very full of weed-seed, which may render more work necessary. A light harrow with short teeth is the most effectual weed destroyer; or a cultivator may be used for the same purpose, but should be set so as to run very shallow.

But few weed-seed will germinate at a depth lower than two inches, and by repeated harrowing with a harrow having teeth two or three inches long, they will all soon be destroyed, while if plowed deeper a fresh crop of seed will be brought to the surface to grow.

Two years ago, I had an acre of new ground, rather hilly, which had been partially cleared, and was well set in blue grass. I deadened the few remaining trees, broke up the sod about eight inches deep, and followed with the subsoil plow eight inches deeper; then I planted in squares, three feet both ways, and planted on the surface, and covered about one inch. When it came up, the plow was passed through one way, throwing the dirt from the corn. It lay for two weeks, and was then about a foot or fifteen inches high, when the three-shovel plow was passed through, once in a row, across the former plowing. It was never touched afterward, as there were no weeds, and the ground remained clean, level and loose. Every hill had from three to five fine ears, and I gathered and measured one hundred and fifteen bushels of sound, nice corn. This is not equal to what others have raised, but in proportion to the labor expended is perhaps nearly as good.

Now "what man has done, man may do." Those who have the best soil may raise the largest crops, if they but pursue the surface-culture; and those having poorer land may double their present average by feeding the soil and then cultivate as above.

From Godey's Lady's Book.

OVER-EATING—GREASE—BATHS—HYDROPATHY, &C.

BY JNO. STAINBACK WILSON, M.D., OF COLUMBUS, GA.

The quantity of gastric juice secreted is not regulated by the amount of food taken, but by the wants of the system; and, as only a definite quantity of food can be acted on by a given amount of gastric juice, any superfluity remains undissolved for some time—either continuing in the stomach until a fresh supply of the solvent is secreted, or passing into the intestinal canal (bowels) in a crude state, and becoming a source of irritation, pain, and disease.

The use of salt, pepper, mustard, and other stimulants, increases the quantity of gastric juice; but their constant or excessive use must finally interfere seriously with the digestive process by causing irritation, inflammation, or ulceration of the lining membrane of the stomach.

The same effects will ensue from excessive indulgence in the pleasures of the table; for, however suitable and nutritious our food may be, any portion remaining undissolved must be a source of irritation and disease; and, though the effects of overeating may not be immediately manifest, yet they will assuredly follow, sooner or later, in the form of dryness of the mouth, thirst, quick pulse, foul tongue, fullness about the stomach, and other symptoms, indicating that the secretion of the digestive fluid is suspended, as a consequence of the constant and excessive excitement to which the stomach has been subjected.

Fat Pork and Bacon, and Frying.—Broiling and boiling are the best modes of cooking meats; and when we say the best mode, we mean the most wholesome; and food served up in the most wholesome manner is most palatable to an unperverted taste, and is therefore the *best* in every sense of the word. Baked meats are very nutritious, but very indigestible. Frying is the most objectionable of all the culinary processes, and possibly this is the

reason why it is, perhaps, more in vogue than any other mode of cooking; for it does really appear that our tastes have become so perverted and depraved by bad habits, that we almost inevitably fall into the wrong way.

The United States of America might properly be called the great Hog-eating Confederacy, or the Republic of Porkdom. At any rate, should the South and West set up for themselves, and should they be named dietetically, the above appellation would be peculiarly appropriate; for, in many parts of this region, so far as meat is concerned, it is fat bacon and pork, fat bacon and pork only, and that continually morning, noon, and night, for all classes, sexes, ages, and conditions; and, except the boiled bacon and collards at dinner, the meat is generally fried, and thus super-saturated with grease in the form of hog's lard. But the frying is not confined to the meat alone, for we have fried vegetables of all kinds, fried fritters and pancakes often, fried bread not unfrequently, and indeed fried everything that is fryable, or that will stick together long enough to undergo the delightful process. Why, among this good Christian people, hog's lard is the very oil that moves the machinery of life, and they would as soon think of dispensing with tea, coffee, tobacco, or any other indispensable, as with the essence of hog. Grease being the most indigestible of all things, it is not at all strange that dyspepsia, fevers, liver complaint, skin diseases, and various inflammatory affections should be so prevalent among a people who have everything swimming in grease.—Yet all these disorders are laid on the climate, bad air, bad water, a "mysterious dispensation of Providence," and everything except the true cause, while the deluded self-destroying victims are continually falling into the grave, all unconscious of the fact that they have brought upon themselves swift destruction by their own conduct, by living in daily violation of the laws of health.

It is a common opinion that grease, and especially hog grease, is highly nutritious, but this is a great mistake; for fat and oil belong to the heat-producing, and not the muscle-producing, class.—Fat meats, or something of the kind, are required by people who are exposed to the rigors of a cold climate, and they may be taken with impunity by persons of active habits, even in warmer latitudes; but delicate persons, who lead an inactive life, and especially in a warm climate, cannot expect to enjoy health, if they indulge, to any great extent, in fat meats and oily food. Between negroes and hogs there seems to be congeniality in more respects than one: fat bacon and pork are peculiarly appropriate for negroes on account of their habits of life, and their defective heat-generating powers; but for white women, and especially Southern white women, in their present mode of living, no diet could be selected that would be more injurious.

The Warm Bath and Wet-Sheet Pack.—As a hygienic agent, the use of the warm-bath is more restricted than that of the cold; yet it is highly useful in that state of excitement, general uneasiness, and soreness, which often precedes actual disease. In such cases, the wet-sheet pack, which is only a modification of the warm bath, is very appropriate, and is preferable to the ordinary warm bath on account of its convenience, and because it can be used as long as may be desired while comfortably reclining on a bed.

The wet-sheet pack has become somewhat familiar, through the agency of the hydropaths, and is used as follows: One or more blankets are spread upon a bed, and over these a sheet wrung out of water; the patient then lies full length on the sheet, and it, together with the blankets, are closely tucked in around the body. The water is generally used cold, but in most cases reaction soon occurs, and the heat of the body vaporizes the water; and thus we have a most excellent and agreeable warm vapor bath, which is even better than a water bath, because the rarity of the vapory medium causes a greater determination or rush of blood to the skin.

As a medicinal agent, the warm water bath or the wet-sheet pack is one of the most safe, extensively applicable, and effectual remedies that can possibly be resorted to in domestic practice. Many people are deterred from the use of the warm bath through groundless fears, originating in erroneous notions as to its mode of action. It is a common opinion that the remedy is stimulating and exciting, and therefore inappropriate in fevers and in inflammatory affections, attended with a full pulse and dry skin; but this is a great mistake. True, the warm bath stimulates the skin and determines or draws to the surface, but, at the same time, it relaxes the vessels of the skin, promotes perspiration, opens the pores, and, being of a lower temperature than the body, abstracts heat, and thus soothes and quiets the nervous and vascular systems; in short, it acts as a *sedative* or soothing remedy. The error as to its mode of action has arisen from confounding the hot and warm bath. The hot bath, when above the temperature of the body, is a stimulant to the whole system; but the warm bath—by which term we understand a bath below the actual or relative temperature of the body—is never stimulant, but always sedative, in its general action, or its action on the system as a whole.

SHOEING HORSES.

REMARKS ON THE FROG.

There are several reasons why large portions of the frog should not be removed, and I will briefly allude to some of them. In the healthy frog there is a solid wedge-like portion of horn extending from the cleft to the point of the same; it lies directly under that small yet very important bone, known as the "navicular"—which signifies *boat shape*—and this bone, its region and contiguous tissues, often become the seat of a very painful disease, known as *navicularthritis*—inflammation of the parts.—This disease often arises, so say the authorities, in consequence of removing the bulbous prolongation termed the anterior point and bulb of the frog; the function of which is to protect, to a certain extent, this bone, and the sensitive parts connected with it, and to shield them from the injuries which might otherwise occur when the animal is made to travel fast over hard and uneven roads.

A very distinguished physiologist has asserted that when once this bulbous enlargement is cut off, it can never be reproduced, and thus this peculiar

bulbous enlargement is seldom found in a horse's foot, after he has been pared and shod. This enlargement or thickening of horney substance in the frog not only protects the navicular region, but it also shields the coffin joint, yet there is no part of the sole which receives such a thorough paring as this.

The bulb of the toe once removed, nature causes augmented secretion of horny substance to make up for the loss of this bulb; this secretion is often very abundant, but nature is no match against knife and butteris—the faster the horn grows, the better chance is there for those who feel disposed to cut and whittle it at every subsequent shoeing; then the secretory function soon becomes impaired, and we find that the part finally becomes inelastic and brittle.

The frog, as a whole, is that cushion-like substance, which, by coming in contact with the ground, prevents jar and concussion, not only to the sensitive tissues within the hoof, but to the joints above —in fact, by the same means, some jar or concussion, which might otherwise occur to the whole body, is lessened.

The frog is a part which is developed in the same ratio with other parts of the hoof, provided the parts are in a healthy condition, and thus the integrity of the whole is preserved; the frog, therefore, serving as a part of the basis of the animal structure, cannot be removed with impunity.

The reader is probably aware that if the frog be cut away, so that nothing but the shoe comes in contact with the earth, the body of the animal has little, if any, solar support; hence arises strain of the laminæ, and finally descent of the sole.

Strain or *sprain* of the laminæ, and descent of sole, is followed by structural alterations of tissues and parts within the hoof, and then the animal is said to be "foundered"—ruined in the feet.

When preparing the foot in view of applying the shoe, it may be proper to remove just about as much of loose and rough portions of frog as the animal might be supposed to wear off, provided he were not shod; and yet, according to the testimony of eminent surgeons, this is not always good policy, for these ragged and uncouth looking parts usually serve as a protection to new formations beneath, and should not be removed until the latter are perfected.

I am aware that the frog looks better when pared, but a healthy condition of the parts does not consist altogether of good looks, and the same reasoning also applies to the body of the animal; there are many fine looking horses in this city, yet many of them, in consequence of hereditary predispositions and insidious disease, may be next to death's door. We get a very handsome looking hoof and frog, by means of knife, butteris and rasp, but I defy any man to preserve their integrity, and keep them healthy by such instruments.

There was a time when the practice of cutting away the frog was recommended by surgeons themselves, so that the smiths who now, in good faith, practice it, are not always blameable. One author, whose work I have perused, endeavors to smooth the matter over as follows: "The frog offers so little resistance to the knife, and presents such an even surface, so clean and nice, and cuts so easy, that it requires more philosophy than many smiths possess to resist the temptation to slice it away, despite a knowledge, in some instances, that it would be far wiser to let the frog alone."

One of the most distinguished cavalry surgeons to the British army says, that he never allows a knife or butteris to touch the frog, for the simple reason, that a long experience has shown, conclusively, that the frog possesses, under certain circumstances, less reproductive powers than some other parts of the hoof, and the individual alluded to has had horses in his posession for more than five years, whose frogs never scraped acquaintance with a knife or anything of the sort.

The reader may desire to know how the frog is to disencumber itself of its ragged and apparently superfluous surfaces—if so, I answer that nature has provided a means, which is a process of casting off or sloughing, and when this does occur, a new growth is seen beneath it, a smaller frog is visible, yet it is an entire one, and soon acquires magnitude in ratio with its connections.

Among some persons, an idea prevails, that a hoof should be *circular*. This is a great mistake, for on examination of a colt's foot, we find that the segment of a circle is more apparent on the outside of the hoof; on the inside from the toe to the heel we have less curve.

This appears to be a wise arrangement, as there is less liability to strike the inner angle of the hoof against the opposite limb; therefore I infer that any attempts by means of knife and rasp to make the inner margin of the hoof describe the segment of a circle is contrary to the intention of nature, and injurious to the feet.

APPLICATION OF THE LIME LIGHT.

For some evenings past the completed portions of the Westminster Bridge has been lighted by the new lime light, and has presented a brilliant appearance. There are ten lights on the bridge—about one-third of the number of old gas lights.

The light is of a pure white color and of dazzling brilliancy, making all the old gas-burners in the proximity appear as dull as though they were burning in the bright sunlight of noonday. It was to this description of light that Prof. Faraday referred, when he stated it was so intense that it could be distinctly seen for a distance of ninety-five miles, and the correctness of this statement was verified during the ordnance survey of Scotland, when one of these lights, placed at a station mark on the top of Ben Lomond, was distinctly seen at the Koock Layd, between ninety and one hundred miles distant. A single jet of the lime light of medium size is equivalent to forty argand, or eighty fishtail gas-burners, or to four hundred wax candles; and its intensity and brilliancy may be increased by augmenting the quantity of gases supplied. As compared with the illuminating power of common gas, a single jet, consuming four feet of the mixed gases of hydrogen and oxygen, is said to be equal in illuminating power to that obtained from four hundred feet of ordinary gas.

The mode by which the light is produced is by the combustion of lime under the great heat caused

by the flame of the mixed gases. A stream of common gas, which is used instead of pure hydrogen, is conducted through one pipe, and a supply of oxygen is sent through a second one, each being attached to separate gas holders. These pipes terminate near the lamp in one single tube, where the gases are allowed to mix in their way through a curved jet, to what may be called the wick of the lamp, which is simply a lump of lime held in close proximity to the mouth of the curved tube by a piece of metal. In lighting the lamp, the first step is to direct the stream of hydrogen upon the lime; it is lighted, and gives forth a small flame of pale yellow color. In a few seconds after, this pale color gives place to a deep red, caused by the combustion of the metal calcium in the lime, under the great heat of the hydrogen flame. When the lime is in this state the oxygen is turned on, and instantly the bright white light is produced, which will continue as long as the "wick" remains unconsumed. The supply of lime is kept up by the action of simple clockwork machinery, which raises the material as it burns down, at a rate of speed varying according to the progress of the combustion. There is nothing of an expensive character about the light, and with any ordinary care it may be used with perfect safety.—*London Observer.*

PERIODIC ATTACKS---SHEEP HUSBANDRY.

Periodically, the whole country gets stirred up with a single idea—and it takes precedence of all reason or policy. One year it is stock growing; another, butter and cheese manufacture; another, wheat culture; another, "making a corn crop;" another, getting rich breeding and feeding fowls.—Now, we see there is being an effort made in some parts of the county, to create a sheep fever—especially in the West are there men who advise keeping sheep instead of grain growing—because it is now profitable—a cogent reason to be sure.

We do not advise it for that reason. We urge the keeping of more sheep and stock on less land, in order that grain growing may be made more profitable. There is no doubt that farmers can profitably devote more attention to the production of wool and mutton—but it need not, and should not, follow that they produce less grain in consequence. We look upon sheep husbandry, properly managed, as one of the greatest aids to the profitable culture of the cereals. And we propose to give examples to prove it, in a short time.

We advise keeping more sheep—the number and character should depend upon the character of the accessible market. The relative market value of wool and mutton should determine the character of the sheep. And the relative value of both, compared with other kinds of stock or grain, should determine the number of sheep, or the proportion of attention and capital to be devoted to this branch of husbandry.

Because editors, A, B, & C, cite the success of D, E, & F, in the production of wool and mutton, and the increase of their flocks, it does not follow that G, H, & I, can get everlastingly rich by rushing at once into a business in which they have no experience. In all these things it is best to begin moderately, study carefully, and *count the cost and profit at every step. Never take anything for granted* in agriculture, that involves profit or loss—*cipher it out!* So shall each man learn more of his vocation, and learn better how to succeed in it.

Charge some of these stories to the interests of sheep breeders who have large flocks to sell—perhaps at large prices. Take notice, however, we do urge the importance of multiplying the resources of the farm. Sheep should, in most cases, become a part of each man's system of husbandry.

CROSS-BREEDING OF ANIMALS.

The following remarks on the above much mooted point, upon which a great deal of ink has been wasted, are from the pen of an English writer, well posted up, and candid and fearless in the expression of his opinions. After a survey of the whole question, he remarks:

We cannot do better, in concluding our paper, than gather up and arrange in a collected form, the various points of our subject, which appear to be of sufficient importance to be again presented to the attention of our readers. We think, therefore, we are justified in coming to the conclusions:

1st. That there is a direct pecuniary advantage in judicious cross-breeding; that increased size, a disposition to fatten, and early maturity, are thereby induced.

2d. That while this may be caused for the most part, by the very fact of crossing, yet it is principally due to the superior influence of the male over the size and external appearance of the offspring; so that it is desirable, for the purposes of the butcher, that the male should be of a larger frame than the female, and should excel in those peculiarities we are desirous of reproducing. Let it be here, however, repeated, as an exceptional truth, that though as a rule the male parent influences mostly the size and external form, and the female parent the constitution, general health, and vital powers, yet that the opposite result sometimes takes place.

3d. Certain peculiarities may be imparted to a breed by a single cross. Thus, the ponies of the New Forest exhibit characteristics of blood, although it is many years since that a thorough-bred horse was turned into the forest for the purpose. So, likewise, we observe in the Hampshire sheep the Roman nose and large heads, which formed so strong a feature in their maternal ancestors, although successive crosses of the Southdown were employed to change the character of the breed.

It has been asserted by some observers, that when a female breeds successively from several different males, the offspring often bear a strong resemblance to the first male, which is supposed to arise from certain impressions made on the imagination or nervous system of the female. Although this is sometimes or often the case, we doubt very much whether it is so frequent as to be considered as a rule.

4th. Although in the crossing of sheep for the purpose of the butcher, it is generally advisable to use males of a larger breed, provided they possess a disposition to fatten; yet, in such cases, it is of im-

portance that the *pelvis* of the female should be wide and capacious, so that no injury should arise in lambing, in consequence of the increased size of the heads of the lambs. The shape of the ram's head should be studied for the same reason. In crossing, however, for the purpose of establishing a new breed, the size of the male must give way to other more important considerations; although it will still be desirable to use a large female of the breed which we seek to improve. Thus the Southdowns have vastly improved the larger Hampshires, and the Liecester the huge Lincolns and the Cotswolds.

5th. Although the benefits are most evident in the first cross, after which, from pairing the cross-bred animals, the defects of one breed or the other, or the incongruities of both, are perpetually breaking out—yet, unless the characteristics and conformation of the two breeds are altogether averse to each other, nature opposes no barrier to their successful admixture; so that, in the course of time, by the aid of selection and careful weeding, it is practicable to establish a new breed altogether.—This, in fact, has been the history of our principal breeds.

We confess that we cannot entirely admit either of the antagonistic doctrines held by the rival advocates of crossing and pure breeding. The public have reason to be grateful to the exertions of either party; and still more have they respectively reason to be grateful to each other.

Let us conclude by repeating the advice that, when equal advantages can be attained by keeping a pure breed of sheep, such pure breed should unquestionably be preferred; and that, although crossing for the purposes of the butcher may be practiced with impunity, and even with advantage, yet no one should do so for the purpose of establishing a new breed, unless he has clear and well defined views of the object he seeks to accomplish, and has duly studied the principles on which it can be carried out, and is determined to bestow for the space of half a life-time his constant and unremitting attention to the discovery and removal of defects.

CLEANING GRAIN FOR MARKET.

The practice that prevails to no small extent of sending grain to market imperfectly cleaned, is bad economy for the farmer, to say the least of it. The loss that results to the farmers of the State, from this cause amounts to thousands of dollars annually. A crop of wheat thoroughly cleaned from the chaff, foul seed and other trash, will sell from five to fifteen per cent. higher than the grain that reaches market in the condition that much of it does from the hands of slovenly farmers. There are many things that a farmer cannot afford to do, if he only knew what was best for his interest.

Sending grain to market imperfectly cleaned is one of the things that no farmer, whether rich or poor, can do without a decided loss. The manner in which grain is cleaned is a matter that attracts the attention of the miller, as much as the quality in any other respect, and he demands a deduction accordingly. All grain that is now received at the flouring mills is cleaned over in order to produce the best possible quality of flour, and that which contains the greatest quantity of foreign matter is subject to the heaviest loss, and the purchaser always avails himself of the argument afforded by a badly cleaned lot of wheat, in order to secure the greatest deduction from the standard of a well cleaned article of an equal quality in other respects.—Wheat thoroughly cleaned from all foul and foreign matters, is not only better in itself, and brings a price much more than corresponding to the difference in weight between a foul and a well cleaned article; but the badly cleaned wheat is liable to injury from dampness and mould, arising with the foreign matters mixed with it. Two lots in every other respect of all equal quality, the one well cleaned, the other containing oats, and dirt of various kinds, adding, perhaps, not two per cent. to the weight, is sold at discount from the other lot equal to ten or twelve per cent. Another lot cleaned in like manner is passed as unmerchantable, having become musty, which, originally, was equal in quality to some of the best lots, and would have brought the market price had it at first been well cleaned.

A little care in running the grain through the mill will obviate this difficulty, and in some instances we have no doubt but that it would pay well to run the grain through a second and a third time, and render it perfectly clean. A reputation is worth something in market, in the sale of almost any commodity, and this may be true in the case of well cleaned grain.—*Farm Journal.*

COTTON.—The word cotton, which is adopted in all the modern languages of Europe, is derived from an Arab word. The origin of the use of fabrics made from this article dates very far back. In the time of Herodotus all the Indians wore them; in the first centuries before Christ there were manufactories of cotton tissues in Egypt and Arabia, but the Greeks and the Romans do not appear to have used them much. The Chinese did not commence cultivating the cotton until after the conquest of the Tartars in the thirteenth century, and at that same period cotton tissues formed an important article of commeree in the Crimea and Southern Russia, whither they were brought from Turkistan. From the tenth century the Arabs had naturalized the cotton plant in Spain; and in the fourteenth the cottonades of Granada surpassed in reputation those of the East. The manufacture of cotton goods in Italy dates as far back as the commencement of the fourteenth century, the first establishments being at Milan and Venice. It is presumed that there were at that period manufactories for cotton goods in England, as Deland, who lived in the time of Henry VIII., speaks of some at Rolton-on-the-Moor, and an act of Parliament of 1552, under Edward VI. mentions the cotton tissues of Manchester, Lancashire and Cheshire. The cotton manufacture bid not acquire any importance in France until 1787, when the French Government established spinning machines at Rouen; but it was not, however, until after the empire that, thanks to the efforts of Richard Lenoir, this branch of industry became flourishing.

From the American Farmer.

VALUATION AND INSPECTION OF GUANO AND OTHER FERTILIZERS.

Written by Dr. Stewart, *Chemist of Maryland State Agricultural Society.*

There are seven modes of estimating the value of manures. The Inspector gives the proportion of phosphoric acid in guano, and this fixes its relation to an arbitrary standard, called A or B—*according to the law*—but as no regard is had to the *solubility* of the phosphoric acid in article sold under the name of guano, this must be an *arbitrary* or *unreasonable* valuation—and the inspection only enables the farmer to guard against the reception of *one* variety of *damaged and adulterated guano.* As coprolites and bones *are not* guano, they can be adulterated *ad libitum*—but if the bones of turtles or a petrifection "*as hard as marble*"* is ground *and called guano,* it must be inspected according to law and stamped or stencilled by State authority, and delivered to the farmer as guano,. The name, guano, sells it, and it cannot be sold under the name of guano unless it is inspected, consequently all this extra expense is put upon the poor farmer, upon the same principle that "American brandy is put up in French barrels, exported and then imported again, in order to obtain the Custom House voucher for its French origin." This is "paying dear for the whistle;" but in this case the expense falls on the consumer, whereas, in the case of guano, it rests on the farmer *exclusively.*

If, *as I suppose,* the dealer is an honest man, who adopts the name guano because sustained by the best authority, *as in the case referred to,* (coprolites,) then it is just the case I want "to *show up.*" as it exhibits facts without attributing *bad* motives—especially if I proved that the article is neither guano nor as good as guano!!

Phosphoric acid, as it naturally exists in guano, may be soluble in pure water—or it may be comparatively insoluble, except the water be acidulated, as, for instance, that of bones and some varieties of phosphatic guano—or it may be difficult of solution *even in acidulated water,* except by the aid of heat or prolonged infusion, as, for instance, that of coprolites or *petrified* excrements of animals, *that are now ground and sold under the name of guano*—the Inspector being sustained by the best authority for branding them guano, and it being his duty so to do, according to the law as it now stands—(but this I explained in the last number of *American Farmer*)—and I will only mention one more class in which phosphoric acid is very insoluble, even when boiled in acidulated water, viz: phosphate of iron and alumina or earth, and mineral phosphate that are sometimes ground and sold as manure, and their value estimated, *by the best authority,* by the *proportion* of phosphoric acid.

Now it will be observed that these four classes embrace *all* phosphatic manures—also the classification is *rational* and *not arbitrary* and *un*reasonable, as are the distinctions or classifications of the Inspector, and which he is bound by law to adhere to.

My fourth class is less than one-fourth the value of the first, and the first is double the value of the second, to any farmer.

It matters not *where* the article comes from, my classification by four numbers gives the farmer a *distinct* idea of the relative value of the article he buys; whereas the present mode of inspection does not, as the bag must be branded according to the ipse dixit of some *interested party,* who sends it to the Isspector under the most *saleable name*—this being, of course, a double lie when the article is neither guano nor from the locality designated by the brand.

It will be observed that I classify *all* phosphatic manure together and value them in *proportion* to the *solubility* and the per cent. of phosphoric acid that they contain. Two items, just as two items are made the basis of valuation in Peruvian guano, viz; ammonia and phosphates—the one worth 17 cents per pound, and the other 2 cents in Peruvian: the one worth 4 cents per pound and the other 2 cents in phosphatic guano.

For instance —if any phosphatic compound is found to contain over one per cent. of phosphoric acid soluble in pure cold *rain* water, it is classed as No. 1 and marked A, B, C, just in proportion as the quantity of *soluble* acid varies, upon the same principle that Peruvian guano is marked A, B, C, in proportion as its quality varies.

If any phosphatic compound is found to contain *less* than one per cent. of phosphoric acid soluble in water, then brand it No. 2, A, B, or C, in proportion to the per cent. of phosphates soluble in *cold* acidulated water.

If any phosphatic compound or guano contains less than one per cent. soluble in cold acidulated water, then brand it No 3 A, B, C.

And so, upon the same principle. No 4 would be stamped A, B, or C, or X, XX, XXX, in proportion to the phosphates, soluble in boiling acidulated water, (that were insoluble in cold acid percolating through them in the proportion of 10 to 1.)

There are other details of my plan for the inspection and valuation of manures, that I must reserve for the next number of the *Farmer,* and I will only add that by my plan *all* manures *sold in packages,* whether imported or manufactured, should be weighed, numbered and sampled, so as to diminish the expense to the farmer to one-half the present tax for inspection—consume only one-half the time, and double the security—making the inspection seven-fold more definite and reasonable, instead of the present arbitrary and *un*reasonable mode.

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* Since writing the above paper, I have received two letters from Baltimore, with regard to the article in the last *American Farmer,* headed "Guano vs. Coprolites." The request is made that I should distinctly state the names of those articles now sold in Baltimore under the name of guano that are not as soluble as guano, and that I pronounce to be coprolites.

I will give a test by which any one can, without chemical reagent or manipulation, *see for himself.* With the aid of a good pocket lens, or, still better, a microscope, the Sombrero guano will be found compact and dense as one of the secondary marbles, whereas Navassa guano will appear *porous,* and evidently composed of "*organic* matter." I have *proposed,* however, under these circumstances to examine all the varieties of guano, or articles sold as guano, provided I can secure samples of the State Inspector, that have never passed through the hands of interested parties, but sent to me directly *by mail,* under the official seal of the State Inspector.

I have no reason to suppose that the present Inspector does not carry out *strictly* the provisions of the *present* law under which he acts. I know him to be a polite and obliging officer—several interesting specimens of guano that I have obtained for comparison, and for our cabinet, I have received from him out of his reserved samples, and under his seal, per mail. But if the next Legislature changes the law, I am willing to offer the result of ten or fifteen years' experience and observations, to aid them in improving the present law; provided, I am requested so to do by the proper authority—and in the meantime I will endeavor to expose some of the errors in the inspection and valuation of manures.

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METEOROLOGICAL.

It is a popular superstition that there is more moisture in the air on a foggy day than on a scorching hot day in July; while the truth is quite the reverse. In hot weather, a vast quantity of water is evaporated from the earth's surface, and exists in the air as an invisible vapour; put if we could suddenly lower the temperature of the air to a certain point, all this moisture would be condensed into thick fog. A body of air can absorb, at 32 deg. Fahrenheit, the 100th part of its own weight of watery vapour; at 50 deg. Fahrenheit, the 80th part of its own weight of watery vapour; at 86 deg. Fahrenheit, the 40th part of its own weight of watery vapour; at 113 deg. Fahrenheit, the 20th part of its own weight of watery vapour.

Hygrometers are instruments by which the humidity of the atmosphere is determined. A simple one can be had by taking a polished silver or tin cup, into which we are to place a tolerable thermometer. We observe the temperature of the air; then put some ice-water into the cup, and as soon as the beads of moisture collect on the outside of the cup, observe the thermometer. It will, of course, have fallen, and the difference between the former and the present temperatures will show the due point, or the number of degrees which it would be necessary to cool the air to cause the deposit of dew. Speaking of the thermometers we buy at the shops, Prof. Silliman said they were generally very unreliable. A good thermometer is one which contains good mercury, which has a perfectly uniform bore through the tube, and which is well made. We may test them thus: To get the boiling part, of course we put the bulb into boiling water, and see if the mercury rises to 212 deg. To get the freezing point, put it into a mixture of ice and water, and see if it stand at 32 deg. And to get the zero point, mix ice and salt, and pack them about the bulb. Before coming to the lecture he bought four thermometers, and showed us that they severally marked 64 deg., 62 deg., 65 deg., and 66 deg. A thermometer should never be hung against the wall of a house, for the radiated heat makes the mercury rise often as much as 4 deg. It should be placed on a post in the yard. It has been proved that in our country the temperature at 9 a. m., will be just 1 deg. less than the average of the whole day. If our thermometer makes 50 deg. at that hour, we may know that the day will average just 51 deg. The coldest hour of the day is 7 a. m., and the warmest 2 p. m.—*Prof. Silliman.*

SUGGESTIONS TO PLANTERS.

Now that the cotton season is over and the growing crop will be maturing in a few weeks, we deem it proper to offer the following suggestions for the benefit of planters:

1st. Let your cotton, when it opens, be picked with proper care, being clear of dirt, as free as possible from trash. Both these thing are great drawpacks, in effecting sales. Factors find great difficulty in selling dirty and trashy cotton, and they are frequently compelled to effect sales at very low prices, while the same cottons, if clear, would command ready sales at fair prices, and thus pay the owners well for the extra labor required.

2d. Take proper pains in ginning and packing.—Avoid, as far as possible, the too common evil of "napping" with the gin. And also of "wet packing" it with screws. Let enough bagging be put on to cover up the cotton entirely, then cows will not eat into the bales; and they will be in much better condition for shipping. Bagging will generally pay for itself in selling the cotton, hence the greater propriety of using a little more to put the bales in better condition. When cotton is well covered, it suffers less from exposure to fire and other damages; and rogues have not the same opportunity to draw handfulls out to replenish their own stock. In ginning, two qualities of cotton should not be mixed together. Neither should two different qualities ever be put into the same bale. These mixtures are sure to cause annoyance to cotton dealers and factors, and they subject planters themselves to trouble and loss. When planters have remnants of cotton, they should gin and pack each kind to itself; and if the bales are too light for shipping, they can be sold to the cotton factories.

3d. When the cotton is to be sent by Railroad, the planter's name should be distinctly marked with good ink upon the heads of the bales. This is proper at all times, but more especially when shipped by railroad. Cotton brands are generally furnished gratis by warehouses, and every planter can get them with but little cost and trouble. When the name is properly put upon the bales, but little trouble is necessary to identify them; but when the bales are not sufficiently marked, more or lesst rou. ble may be expected, and it is almost sure to come.

By giving attention to these little matters, planters will save themselves much trouble and expense. —*Columbus Times.*

Ridicule principally arises from pride, and is at best but a gross pleasure, too coarse for the highly polished and refined.

If you fall into misfortune, disengage yourself as well as you can. Creep through the bushes that have the fewset briars.

The resolute man who planted himself on his good intentions, has not yet sprouted.

The Farmer and Planter.

COLUMBIA, S. C., OCTOBER, 1860.

HINTS FOR THE MONTH.

The month of October is one of unusual activity on the plantation. The cotton crop calls for immdeiate action. Every day grows shorter and colder, and the risk of loss by rains and winds increases.

Be careful in picking out your cotton, and have as little trash, sand and mud in it as possible—the immense amount of inferior cotton forced upon the market last year has been a dead weight upon the price and sale of cotton. Thousands of bales of inferior cotton are now on hand, of last year's crop, unsold, and calculated to affect the price of the next crop.

Fair cotton is always cash—it is better than cash—it is a bill of exchange, current the world over.—Let us see to its increase, and leave the production of inferior grades to our East India and Africa competitors. The British Cotton Supply Association will attend to it very satisfactorily. It is our interest to grow the best cotton in the world, and having all the advantages of soil and climate, it is our own fault if we do not do it.

Save all the Hay, Pea Vines and Potato Vines, you can, before frost. They will be in great demand during the coming winter.

House your Corn as early as possible; don't wait "till you get over your cotton again." The loss from rain, birds, squirrels, hogs, &c., is no inconsiderable matter, at any time, and in a year of scarcity it tells fearfully.

Wheat.—As soon as possible sow your wheat.—Experience has clearly demonstrated the importance of sowing wheat early. It is safer to risk the fly than all the other risks of late sowing. Apply 25 to 30 bushels cotton-seed per acre, prepare the land well by deep plowing, sow good seed well soaked in solution of bluestone, harrow, or plow in with scooter, then open the water furrows, and lay out your drain ditches; wheat cannot stand stagnant water.

Green Patches.—If you have not prepared about your stables and feeding yards green lots of Barley, Rye or Wheat, for winter and spring use, lose no time in so doing. It will pay.

Sorghum.—Cut your cane before frost, when fully ripe, and stack it up around poles, heads up, in stacks 25 to 30 feet in circumference. Draw a grape-vine tightly around the head of stack, and you will have excellent food for horse or hog, at a less cost than anything you can grow.

Stock.—Get your animals into winter quarters, in as good condition as possible, and forget not that warmth is food. Prepare the best shelters for them you can afford; pine-brush ones are better than none, and anything is better than a *worm fence*—that will not pay.

Get your Hogs fat and in pickle as soon as possible.

"LET THE GALLED JADE WINCE."

A writer, who has been airing his opinions in the *Southern Cultivator*, over the classic signature of Quercus, has made the discovery, that we are an old fogy, and anything but a wit. We are not surprised at the conclusions, and congratulate Quercus upon such a rare display of sagacity.

But, somehow or other, our cousins over the river are exceedingly thin-skinned, when *we* touch them. We have not said a tithe of the hard things that their own brethren have, and yet the *Cultivator* is as mild as a May morning when a Georgian twits the Hancock Planter.

It is a matter of very little importance to us, how much the planters of Hancock make per hand—but when it is claimed for them, by public journalists, that they make, upon *poor land*, a thousand dollars to the hand, and that they do it by a peculiar system of management, by improved implements and by manuring, we have a right to ask how it can be done. If such things have never been done under our eye, we have a right to doubt it, until it can be explained. The pages of the *Cultivator* show but too plainly that it is not believed in Georgia, and it would seem hardly possible to keep such a secret so long, if it could be found out.

We cannot understand Mr. Dickson's classification of hands, and a "Burke Planter's" remark, that, "as a general thing, there is but little difference in the amount made, but 'lots' of difference in the way we count the hands, &c., that make it."

The *Cultivator* has never met the question, but has made such extracts and comments upon our remarks, as would induce its readers to think that we were captious and fault-finding.

There is hardly a number of the *Cultivator* but contains inquiries from some quarter upon the subject, and it all might have been settled by one matter-of-fact article, setting forth the varieties of soil, the number of acres cultivated per hand and horse, the amount of manure made and bought, and the means used to cultivate the crop. We have had a great deal of very pretty writing, but very few tangible facts.

Here is a field for Quercus to display his poetry in, and we invite him to the task:

"Tall oaks from little acorns grow."

WHEAT.

The experience of the best wheat growers in Virginia and Maryland, has pretty well established the fact, that the only way to secure a good crop of wheat is to sow early. Under favorable circumstances, on rich land, and after cotton, our planters may manage to make "enough to do them," but late sowing, after corn, with the preparation common to the country, deserves to be abandoned.

It is better to run the gauntlet of the Hessians by sowing early, than the risk of freezes and shower baths, just as the tender plant makes its appearance. In our climate, wheat is never strictly winter-killed —it is water-killed. This may, in some degree, be avoided, by sowing early, and draining the field by side-hill ditches and water furrows.

Our wheat crop this year has been, in many districts, very light. We have passed through a fiery ordeal this summer, and the cry for bread will come up from many quarters. Let us begin in season to prepare for it. Select your wheat land, put it in good order, manure it well with cotton-seed, soak your seed in solution of bluestone, roll in plaster, and sow it early. If you see signs of fly, or if it grow too rank, pasture it with sheep.

"But the point we wish especially to insist on is *time;* 'we should not have any late sown wheat;' we believe there is not one wheat grower in twenty who realizes the paramount importance of 'time' for perfecting the growth of his crop. Wheat is not an annual plant. True it may be sown in spring and mature seed, but spring wheat is an abortion. The plant requires two seasons to perfect it, and for a full crop of grain it is essential that it have ample time in the fall to send its roots wide and deep. If fly attack it, for being early sown, let it be fed off close into the very ground, if need be, till 1st April. The blade now is of little consequence, but ample roots *must* be made in the fall, if we would have a full crop of grain. We say this without reference to the casualties of midge and rust. These make it of course doubly important. We urge, then, on every account, and whether early or late varieties be sown, that you *sow early.*"

SOUTHERN IMPROVEMENTS.

Our people have been often twitted by the land of wooden nutmegs, for their want of mechanical ingenuity and manual dexterity. Every day almost offers conclusive evidence of a great change coming over our people in this matter, and it may all be attributed to the influence of our Agricultural Societies and Fairs. At these annual exhibitions, which are becoming more general and popular over the whole South, the inventive genius of the people is whetted. They see different implements, and compare them together, note the faults and advantages of each, and go home to ponder over it. Millions of dollars have been spent by the South for Northern implements, which, after a short trial, were thrown aside as good for nothing, simply because the Yankee inventor was ignorant of our wants. He knew nothing of the negro character, of the variety of soil, the climate, staple, or difficulties to be encountered.

Our own people will go to work understandingly, and achieve something practical. At the first Fair of the State Agricultural Society, all the Premiums were taken by Northern Implement Manufacturers. Every year there has been a decided improvement in the usefulness, and a large increase in the number, of Southern Implements on exhibition. Senator Hale can no longer twit South Carolina for being the inventor of an Easy Chair. During the year past, hundreds of patents have been issued to Southern people, for improved Agricultural Implements.

Messrs. Smith, of Spartanburg, S C., for improved ploughs.

Mr. E. Gross, of Union, S. C., for improved ploughs.

Mr. Hobson, of Union, S. C., for improved thrasher.

Mr. Lovejoy, Columbia, S. C., for a cotton press.

John D. Bond, of Greenwood, S. C., for improvement in ploughs.

John P. Allen, of Dover, Ga., for improvement in seed planters.

Samuel Canterberry, of Holmes County, Miss., for improvement in ploughs.

Daniel S. Chase, of Augusta, Ga., for improved anti-friction rollers for propeller shafts.

Henry D. Dunbar, of Memphis, Tenn., for improvement in pistons for steam engines.

W. T. Gill, of Henderson, Ky., for improvement in air-pumps for exhausting and sealing cans.

G. H. Laub, of Newark, Mo., for improvement in carriage springs.

R. M. Lytle, of Triune, Tenn., for improvement in portable scaffolds.

Grafton J. Rice, of Frederick City, Md., for improved sugar grinding mill.

O. L. Richardson, of Athens, Ga., for improved curb for mill stones.

Mark Rigell, of Dawson, Ga., for improvement in cultivators.

James Smith, of Norfolk, Va., for improvement in ploughs.

W. S. Stetson, of Baltimore, Md., for improvement in harvesters.

Hugh M. Street, of Denmark, Tenn., for improvement in gearing.

Joseph F. Tannehill, of Staunton, Va., for improvement in seed planters.

W. A. Taylor and W. W. Graves, of Fort Adams, Miss., for improvement in cultivators.

Col. Saladee, of Texas, for a steam plough.

And we have understood that a patent has been applied for by a citizen of South Carolina for a steam plough.

To Keep Rats from Grain Stacks.—The *Ohio Farmer* says: "Put in a few garlicks among the sheaves when stacking grain, and rats will not trouble it." We have frequently seen this recommended —is there any truth in it?

OUR BOOK TABLE.

We are indebted to the kindness of those enterprising publishers of Standard Agrieultural Works, Saxton, Barker, & Co., New York, for the following works:

The "Young Farmer's Manual," by Todd, $1.25; neatly gotten up, and eontaining a vast deal of praetical information about the farm and workshop.

"Yale Leetures," (50 eents) eomprising the leetures delievered at the Agricultural Convention, at New Haven, February, 1860, on various subjeets.—This little volume eontains mueh interesting matter. Mr. Olcott, the editor, however, seems to think his own comments of more interest than the Leetures.

"Familiar Letters on Chemistry," by Liebig—25 cents—it is hardly necessary to offer eomment upon. Every intelligent agrieulturist who has not read them should negleet it no longer.

"Chemistry Made Easy, for the Use of Farmers," by Rev. J. Tophan, 25 eents, eontains more valuable information in the same spaee than any work of our knowledge, and withal is pleasant reading.

"Farm Reeord, Arranged for 25 Years," by F. B. Hough, $3. A very ingeniously arranged and eomprehensive work. To a systematie and intelligent planter, it would prove invaluable.

"Horses, their Varieties, Breeding, and Management," 25 eents, by H. D. Riehardson, eontains a great deal of interesting information.

"The Ameriean Horse Tamer," by Jeremiah Bentwright, 25 eents, will furnish any man with the same information for what the Peripatetie Horse Tamer will eharge him $10, and bind him to seereey.

"The Dog, and his Varieties," &e., 25 eents, telling all about dogs.

"Our Farm of Four Aeres," 50 eents. The numerous extraets from this little book, going the rounds of the agrieultural press, is suffieient evidenee of its popularity. It is agreeably written, and abounds in plain practieal teaehings. To the ladies in the eountry, this little book must prove interesting and instruetive.

To the Commissioner of Patents, we are indebted for the Patent Offiee Report, Agrieultural, for 1859. It eontains some valuable artieles, and something less than the usual quantity of trashy eorrespondenee, for whieh these volumes have attained a somewhat unenviable reputation.

From Mr. P. B. Glass, of Columbia, we have received—

"The Southern Florist," by Mrs. Rion, of winnsboro', S. C., a neatly gotten up work, and will be found very valuable to all new beginners in the eultivation of Flowers. It is published by our enterprising townsman, P. B. Glass, and can be had at his store. Price, 75 eents.

"Cuba for Invalids," by Dr. R. W. Gibbes, of this City. This is a very interesting and valuable work. It was written by the Doetor, during a sojourn in the Island of Cuba, in quest of health; and from the author's well known ability and standing, as a praetieal physieian, we feel eonfident the work will have a wide eireulation. Priee, 75 eents.

For the Farmer and Planter.

"PEEPS OVER THE FENCE."

Mr. Editor:—You don't know Maj. Fitzfoodle, may be? Well, you ought to. Fitz (as we eall him for short,) is a eapital fellow, and what's more, he takes the papers, and what's more, he lends them to his neighbors, and what's more, he's one of the best neighbors in the world—Fitz is. He's one of the best in more ways than one—everybody gets the good out of him in some way or other. Fitz has been on the hunt after something new ever sinee I knew him, and although he has paid for being humbugged over and over again, he hugs to his bosom as fondly as ever the belief that he will yet enjoy the realization of all his dreams.

Fitz's barn is a euriosity shop. Sueh an odd colleetion of old harrows, eloderushers, rollers, eornshellers, eoberushers, threshers, plows, sweeps, serapers, *et id omne genus* is to be found there. Some of Fitz's hobbies have been found by his neighbors worth adopting, and albeit they laugh at him, they aeknowledge that he has introdueed some good improvements.

I saw Fitz in a stew the other day. He had been in a great stew to get Dr. Cloud's solid sweep for eultivating eotton, that Cloud writes so mueh about, and after getting it, found out that it was a plow he had used 20 years ago, and thrown aside for a lighter and quite as effieient an implement.

Fitz says he saw it stated in the papers the other day, that Peters, who had run the world mad on Sorghum, and made a little fortune selling the seed, during our lunaey, now deelares Sorghum a humbug, and even for fodder, no better than Indian eorn.—Fitz says there must be some new grass in view *pro bono publico*, and although it will most likely be his fate to go in a little, he still stieks to Sorghum, and has never seen any plant of whieh he ean grow so mueh good food, upon poor land, with as little trouble. It will live on less work, will endure severer droughts, and prosper under greater diffieulties than anything he ever saw. Peters says the seed is not safe food. Fitz says, his hogs, horses and poultry do well on it, and the stalk ean be cut when ripe, staeked in almost any way around poles, and will be good food at all times. Fitz has tried it fully, and I believe that he is right.

Right along side of Fitz—one of his nearest neighbors—lives Squire Go-ahead, one of your rushers,

who has always "as many again irons in the fire" as he can attend to. The Squire says, he never saw anybody who knew as much as Fitz, that had so little hard sense. Fitz, he says, is always trying to raise grass, and he is trying to kill it. Fitz, he says, is always running after some new plow, implement or seed, and fiddling away his time in experiments that amount to nothing in the long run.

The Squire is extremely practical. He took one agricultural paper, at Fitz's suggestion, and says "he found the fellow was pretty much following out his own notions any how, and he didn't see that he could gain anything by reading it."

But the wonder is this. Here is a neighbor who condemns in toto, as impracticable, one man's management, into whose plantation he has never been nearer than to peep over the fence; he knows nothing of his plows, harrows, hoes, his produets, save the bales of cotton which go by his house to market; he has never spent a social hour in Fitz's house, never examined his implements or looked into his management, knows nothing about his expenditures or his income, and yet he pronounces this man a humbug. Why? Because he has the reputation of being an intelligent planter; because he does not lay his fence-rails in the light of the moon, plant his potatoes in the dark of the moon, and his cucumbers in the light of the moon. Because he does not turn up his nose at fruits and flowers, and everything which will not turn into hard cash, he is a humbug.

The man may wear out land and negroes, may live like a hog, and be as ignorant as a Hottentot, yet if he can roll out the cotton bales, he is a practical, successful planter. In a great hurry,

Yours,

SNUB.

Fine Cattle.—It was our pleasure last week, while on a short visit to some friends in the country, to see Mr. Hillary Gary's fine cattle, from the celebrated stock farm of Mr. Chas. T. Garrard, of Kentucky. Mr. Gary brought seven or eight head from Kentucky last summer, and he is quite pleased with his purchase, notwithstanding he lost two, *Athelia* and *Nell Gwynne*. He has remaining of this purchase, *Lucy Neal*, a beutiful roan cow, *Belle Ogaunt*, a large fine red cow, *Garrard*, a red two year old bull, *Fawn*, a well-grown, promising young heifer, and *Carolina Belle*, another heifer, we regret not seeing, that is accounted perhaps the finest of the lot. He has, from *Lucy Neal*, a young white bull he calls *Duke of Newberry*, that is really a most beautiful animal. All of these cattle are short-horned, and, as the Herd Book will show, of the finest breed.

It is refreshing to look upon such cattle, after meeting our "common old-field stock" along the roads and in the green pastures. We trust Mr. Gary's enterprise will be emulated by others in our District. We are glad to say that he will have some of these animals on exhibition at our next District Fair. —*Newberry Conservatist.*

For the Farmer and Planter.

CHALK IN RICE.

Mr. Editor:—I propose to offer, through your Journal, some remarks upon a defect to which rice is subject—sometimes to such a degree as greatly to lessen the value of the crop in our State. I refer to what is termed "chalk," the opaque white spot too often seen on nearly every grain in the barrel.

To ascertain the *nature* of the defect, is the first step toward a discovery of the remedy for this evil; and on this point I offer the result of my observations.

In July, when the rice-plant throws out its panicle, or "shoots," before it is ready to blossom, the two valves of the glume or chaff are so closely coherent that the chaff is impervious to water; even should the plant then be overtopped by a freshest, no water can penetrate to the germ. Soon after the whole panicle has emerged from the leaf which enveloped it, the valves of the glume open wide enough to allow the anthers to drop out and hang their filaments, the pistils remaining concealed within. So soon as impregnation is effected, the anthers fall off, and the chaff closes, and the two valves again cohere, becoming water-tight as before. The germ then elongates, the palea stretching along the "back" of the chaff in a thread-like form, reaching the point of the chaff before it (the germ) enlarges much laterally. It then gradually fills with a milky fluid, increasing towards the "belly"* of the grain, until the chaff is entirely filled. The rice is then "in milk."

The process of *hardening* now commences. This also begins, as the filling did, at the "back" of the grain, and proceeds regularly towards the "belly," the middle of this portion being the last point of the grain to become hard. When the process is complete, the whole grain is opaque and of a chalky white colour.

The process of becoming semi-translucent, or "flinty," is then begun; and this, also, at the same point as the preceding change began; and it is completed—should the grain reach perfection—at the central point of the "belly," where the filling and the hardening processes had previously been completed.

These are the changes through which the grain passes, and the order in which it passes, when its development proceeds normally. But too often, from some cause or other, the change from opacity to semi-translucency is arrested when more or less complete, and then an opaque white spot remains—the centre of this spot (whatever its size) being always the centre of the "belly" of the rice grain. This is "chalk in rice," and this chalk therefore is an *arrest of development*, and not a disease.

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* The "belly" of the grain is the more convex edge—that which is covered by the larger valve of the glume.

The produeing eauses must, therefore, aet mainly during the proeess of ripening of the grain. And I would suggest, as among these eauses (if not the prineipal ones) the improper ehanging of the water, and the walking through the riee during this eritieal stage of its growth. When riee is filling, it puts out, from the first and seeond stem joints, roots whieh do not reaeh the earth, but float in the water, branehing into an infinite number of delieate rootlets, for the purpose of gathering nourishment from the water. These, from their number, must eonvey no small part of the food whieh enables the plant to perfeet its fruit. Now if the water is ehanged at this period, during the day espeeially, and the field is allowed to run dry, these little roots are destroyed—one hour's sun, or even drying in the shade, rendering them unfit to perform their funetion.

Again, the wading through the riee, for the purpose of pieking out eertain blaek-seed grasses, whieh is very often done a short time before harvest, must destroy many of these delieate fibres, whieh float in the water between the rows. The plant did not throw out these roots without a purpose; and this purpose, we may reasonably infer, from the time at whieh they are produeed, is the proeuring nutriment by all possible means (and probably nutriment of a peeuliar kind) for perfeeting its fruit. If these roots be destroyed, or seriously injured, and imperfeet development of the grain follow, we may also infer, and I think very logieally, that the one eaused the other.

At any rate, it seems reasonable that all disturbanee or interferenee with the plant should be avoided, whieh may, in any way, impair its strength during a period so eritieal, as regards the *quality* of the grain.

The eorreetness or ineorreetness of these views may easily be proved by any praetieal planter, and it eertainly is worth the while.

A SUBSCRIBER.

Reeipt for Killing the Turnip Fly.—*Messrs. Editors:*—I have a valuable reeeipt for killing the Turnip Fly, or Worm, whieh I will give you for the benefit of our farmers. I have tried it with great sueees this season. It kills instantaneously, and does not injure the turnip:

Take one measure of salt, two measures of lime, and four of ashes, mix well together, and sprinkle early in the morning upon the turnips before the dew is off, and repeat if the worm should re-appear.

S. D. Goodlett.

Greenville Enterprise.]

Inflamed Udder.—A writer in the *N. E. Farmer* says, that he finds by trial, that lamp-oil is an exeellent remedy for inflammation or hardness of eow's teats and bag. He had a eow, whose teats were so hard and feverish, that no milk eould be got from them at night; but applying lamp-oil they would be soft and well in twenty-four hours.

For the Farmer and Planter.

SALT AND LIME.

Mr. Editor:—In your September number, I notiee "A Subseriber" wishes information on the applieation and results of Salt and Lime on Cotton and Corn. Having made several experiments, I will eheerfully give him my experienee: For four years I have tried Salt and Lime eombined, but find it will not pay. I have tried it in all quantities, from a peek to a barrel per aere, but every trial proved a failure. In my experiments with Salt alone, I found that one peek to an acre of Cotton, has prevented rust. In one ease I applied Salt to every alternate row of Cotton, and found that the rows to whieh the Salt was applied did not have rust, while those without Salt were nearly killed with the rust. My expeperienee with Salt on Corn is, that on heavy, stiff bottom lands, the yield was nearly double, where salt was applied, eompared with the yield from the same area and quality of land, without Salt.

I have experimented with nine kinds of manure, and after earefully watehing the progress and result of eaeh, have eome to the eonelusion that one peek of Salt, eombined with four bushels of lot manure is equal to 100lbs of guano as a fertilizer, and is mueh eheaper. As a general rule, too mueh lot manure is applied to the aere, but I have not suffieiently expermented in that respeet, to say positively how mueh should be applied. My experienee has taught me that lot manure should be applied early in January, if the weather will allow of working the land. One wagon load applied in January will do as well as four loads applied in Mareh.

You ask me to get you *one* new subseriber, if the *Farmer and Planter* pleases me, and I wish to see it flourish. Well, that is a very modest request, and I herewith enelose you the dollar, to renew my own subseription, and one for Mr. ———. But I do not intend to stop at that; I have "set my pegs" to twenty new subseribers for you, and I intend to get them. The faet is, all this neighborhood is going to take the *Farmer and Planter* next year; and I am glad to inform you that, in other portions of our State, where I have lately been, there is quite a "fever" up for you. I shall not be at all surprised to hear, by next March, that you ean boast of 10,000 *paid up* subseribers. So mote it be.

ROBIN ROUGHHEAD.

[Well, friend Robin, we thank you for your kind wishes and kinder determination; and we here promise you, that if our list runs up to even 6000, by next Mareh, we will send you, "*free gratis for nothing,*" one of the prettiest, most eomplete little plantation Grist-mills you ever saw—worth $80—and when you get it, you will never have oecasion to go to mill again.—Pub.]

For the Farmer and Planter.

BEE CULTURE.

Mr. Editor:—I frequently see, in your interesting journal, treaties on the Culture of Bees, from authors as varied in their notions as authors generally get to be. Some seem to have discovered the exact inches necessary for a hive to contain to raise honey to the best advantage; favoring, at the same time, the propagation of the bee species, such as turning out the most surplus honey, and giving off the most swarms. Others have discovered a new method of driving or robbing bees of their honey. All these we esteem very good in their place, but the main point seems still involved in mystery. None seem to feel an interest, judging from their silence on the subject, or have not yet discovered, a certain or sure mode of treatment, by which a colony of bees can be preserved from the moth, and other enemies of the honey gatherers. So far as hives are concerned, and the various treatment of bees, nearly every Apiarian has notions peculiarly his own, and it requires not such systematic treatment as many would suppose. As for having hives of any particular size, I do not deem it essential, but think that persons should be governed, to some extent, by the size of the swarm. My experience in bee-raising testifies to the opinion I have just advanced. I have used hives that would hold from one bushel to three bushels, and do not recollect much difference, if any, in their welfare or time of swarming, for I cannot think that two gums could live together more peaceably in a large hive than they could in a small one; and I am confident that they do not require to be crowded out of the hive before they swarm. Many persons use gums about 30 inches in length, and seem to succeed very well. I know of one man that uses no other hive, and has, probably, upwards of one hundred sitting all about in his yard, with no bench, only a piece of plank between the gum and the ground, and a few shingles or boards laid on the top to intercept the rays of the summer's sun. His bees seem to succeed finely. This plan, however, will not do for our low country of Georgetown. We would find the frog as destructive as the worm. Our District, Mr. Editor, is a great country for bees, containing numerous swamps and bays, but the culture cannot succeed well, until we discover some plan to place our bees beyond the reach of the miller, fly, &c. Any information on the matter thankfully received.

S.

Sand for Horse's Beds.—Mr. Small, of Dundalk, a veterinary surgeon of considerable experience, states in the *Southern Homestead*, that sand is not only an excellent substitute for straw for horse's beds, but superior to straw, as sand does not heat, and saves the hoofs of horses. He states that sand is exclusively used for horse's beds in his repository.

For the Farmer and Planter.

TOPPING COTTON.

Mr. Editor:—As there is considerable difference of opinion, as expressed by my neighbors and cotton planters of this section of the State, on the policy and utility of topping cotton, will you allow me a spare place in your very useful monthly, to solicit from some of your experienced subscribers, as well as yourself, an idea or two on this head, and the result of such experiments as any one or more of them, or yourself, may have made, with the different kinds of seed?

Overlooking the art of culture, some planters contend that cotton should not be topped at all, especially the Boyd's Prolific, giving as argument that if nature intended the top limbs of the plant to grow as long as the bottom ones that it would have been so arranged; while others say top early in August; others again late, not until certain leaves of the stalk change color, and thus are many theories expressed but few followed. I am inclined to the opinion myself that any of the various varieties of cotton are susceptible of improvement in yield by topping early, *or at the proper time*; but as agricultural astrologers leave us to catch only the dim outlines of those shadows which are said to portend the approach of perfection on this point, I can but appeal to your instructive columns for information.

LOW COUNTRY.

SPREADING MANURE ON THE SURFACE.

A writer in the Edinburg *Journal of Agriculture*, commenting on the views of Prof. Voelcker, as to the exposure of fresh manure on the surface of the ground relates the following striking experiment, made by a scientific man, for the purpose of testing expressly the several methods of using manure:

"There being a difference of opinion among scientific men, regarding the advantage of spreading dung upon the surface, and leaving it exposed for some time before covering it in, Prof. Legnitz, of Eldena, had recourse to experiment for the solving of the question. For this purpose he selected two-and-a-half roods, which he divided into four equal parts. To No. 1 no manure was given; No. 2 received about two tons of farm-yard dung, which was spread immediately, and covered in by means of the plow; No. 3 was treated in the same manner, with this difference, that the hoe was used instead of the plow. The same quantity of dung was carried to No, 4, and allowed to remain spread for three weeks on the soil before being covered in by the hoe. On the 10th of October, the four lots subjected to experiment were sown with about 95 pints of rye seed each. The following are the total results of the crop of each lot, grain and straw included: No 1 produced 583 pounds; No. 2 produced 770 pounds; No. 3 produced 818 pounds, and No. 4 produced 935 pounds."

The writer very justly remarks, that a single experiment should not be considered conclusive, but that it is sufficiently striking to warrant a repetition of it on a larger scale.

From the Rural Register.

ON THE CULTIVATION OF WHEAT.

Of all the crops to which the farmer in the Middle States looks for the remuneration of his labors, none require more skilful management, or will yield a handsomer return for the labor expended upon its production, than wheat. But even assuming that wheat, although it is usually regarded as "the money crop" of the farm, will not yield one year with another so large a profit as some of the other cereals, yet entering as it does so largely into the consumption of so many millions of people, any increase upon its acreable product must necessarily exert an important influence upon its general use. That we are far behind European agriculturists, when we compare the average quantity of wheat which we raise to the acre with that produced by them, must be conceded. Statistics also show that notwithstanding the immense extent of new land that we are annually bringing under cultivation, the average of the wheat crop is not proportionably increased. The unavoidable inference from this is, that even the best wheat soils of the older States are either unskilfully tilled, or that they are becoming exhausted of those constituents which once rendered them so productive. Perhaps it is to both of these causes that the very remarkable decrease which has certainly taken place is owing; and if such be the fact, the sooner we proceed intelligibly to work to recover the ground we have lost, the better it will be, in a pecuniary point of view, not only for our agricultural friends, but also for our industrial population generally. But to set about this reform, the principles upon which success in growing large crops of wheat are based, must be perfectly understood. Wheat will not flourish upon sands, nor upon any poor thin soil, whatever its texture may be, and to grow wheat to perfection the following conditions are essentially requisite:

The best wheat soil is a deep loam, inclined to clay with a dry subsoil. It must be a soil also, in which all the organic matters required for this cereal are intimately mixed with the earthy ingredients, and where the roots can take firm hold, and can, at the same time, strike their fibres downwards as well as around, in search of food. Where it meets with such a soil, and *is deposited at a proper depth*, it vegetates slowly, pushing to the surface one cylindrical filament, whilst numerous fibres strike into the soil from the seed. These supply the plant with regular nourishment, until in due time a knot is formed near the surface of the soil, from which new roots push forth. These new roots near the surface soon become an additional source of nourishment, and are called the *coronal* roots, the earlier and lower network of roots which sprang from the germ being known as *seminal* roots. Whilst the former are pushing their fibres laterally in search of food, the last mentioned are sending their rootlets downwards, to furnish, at a lower depth, their contribution to the nourishment of the plant. It is clear from this statement, that, if the wheat is seeded too shallow, no coronal roots can be thrown out; and that the plant relying solely for its supplies of food upon the seminal roots, must fail to tiller well, and having less hold upon the soil is more liable also to be winter-killed. "This," as one agricultural writer very pertinently expresses it, "this shows the advantage of *deep* as well as early sowing for winter wheat, whereby it is protected more effectually from those accidents to which it is liable, especially the 'root fall,' occasioned by the frost laying bare the roots. It must be understood, that the seminal roots (those that spring directly from the seed grain) constitute the main organs of nourisment for the growing plant, and that the *tillering* of the latter depends upon the strength and vigor of the seminal roots. But the office of the coronal roots, those that spring from the first joint, is nevertheless an important one. The latter impart to the plant a firmer hold upon the soil, and thus lessen the danger of its being winter-killed, or of lodging in the summer, while they materially assist the lower roots in providing a due supply of nourishment." Having thus shown that it is essential to the future vigorous growth of the plant, that it should not be seeded too shallow, we now proceed to give, from the experiments of Professor Petri, a table showing at what depth the seed is planted to the best advantage.

Seed down to the depth of.	Came above ground in.	Proportion of plants came up.
½ inch	11 days	seven-eighths
1 inch	12 days	all
2 inches	18 days	seven-eighths
3 inches	20 days	three-fourths
4 inches	21 days	one-half
5 inches	22 days	three-eighths
6 inches	23 days	one-eighth

Holding in view the necessity of providing a cover for the coronal roots to sprout in, it will be seen that the best depth at which the grain can be seeded is from one to two inches; and, for the reason already given, nearer two inches than one is to be preferred. We next give Professor Buckman's experiments, to ascertain the best time of sowing, premising, however, that these experiments have reference to the English climate, where the winters are much milder than with us:

Dates.	Height of stem.	Length of ears.	Remarks.
June	3 ft. 5 in.	3 inches	clean straw
July	2 ft. 10 in.	2 inches	clean straw
August	4 ft. 1 in.	4 inches	clean straw
Sept.	3 ft. 11 in.	4 inches	clean straw
October	3 ft. 10 in.	4 inches	rather blighted
Nov.	3 ft. 9 in.	4 inches	rather blighted
Dec.	3 ft. 10 in.	3½ inches	much blighted

The above table indicates that the months of August and September gave the longest ears and the cleanest straw, and that, therefore, they should be chosen in England as the proper period for seeding. But there is this difficulty in the way in that country. The wheat harvest does not commence until about the first week in August, and consequently the operations necessary for getting in the wheat for the ensuing season, is unavoidably delayed until a later period. With us in the Middle States, taking into consideration the danger from the fly, the best time to seed wheat is from the middle of September to the first week in October.

We come now to the choice of seed. This, whether it be of the white or red variety, should be heavy, plump and clean, and more grains will germinate of wheat that has been got out with the old fashioned flail, than of those which have been separated with the thrashing machine, as the latter is more apt to injure the germ. Whatever kind of seed be sown it is a matter of considerable importance that it shall

be frequently varied. "The seed should always be chosen from a poor soil for the seeding of a richer one, and from a cold climate for cultivation in a warmer one," from the uplands to cultivate on the plains and in the valleys.

We have already stated that the soil best adapted for wheat is "a deep loam inclining to clay." We have now to ascertain what inorganic constituents are necessary to the perfect production of wheat in that or in any other soil. We can best exhibit this by giving an analysis of the grain and straw of wheat, and thus showing of what its chief elements are composed. The following table is from Sprengle:

	Grain of Wheat.	Straw of Wheat.
Potash,	2.25	0.20
Soda,	2.40	0.50
Lime,	0.96	2.40
Magnesia,	0.90	0.32
Alumina,	0.26	0.90
Sulphuric acid,	0.50	0.37
Silica,	4.00	23.70
Phosphoric acid,	0.40	1.70
Chlorine,	0.10	0.30
	11.47lbs ash.	35.18 lbs ash.

The above amount of ash was from 1000lbs of wheat and wheat straw respectively. Wherever any one of the constituents named is wanting in the soil, a sensible diminution in the quantity and quality of the grain may naturally be expected. Of green manures, decidedly the best preparation for a crop of wheat is a clover ley, and for the good and sufficient reason that clover contains in its roots and stems all the elements of food that the wheat plant requires. There is a difference of opinion existing amongst our best farmers as to whether the clover should be turned under in a green and succulent state, or whether it should be left until the stems have matured and have become fibrous. Leaving this question still to be decided by subsequent experiments, we may state that in England, they prefer to leave the clover on the ground until the period approaches for seeding wheat; when they plow the land not less than eight inches deep, and then suffer it to rest for a period of from ten days to two weeks before sowing, under the impression that wheat thrives better on clover lands that have been plowed some time.—In harrowing the harrow is passed twice *lengthwise of the furrow*, the wheat drill finishes the operation. If barn-yard manure is used it would be at all times preferable to furnish it to the preceding crop, as otherwise the wheat grown upon a fresh dunged field is apt to rust. Composts, however, are not open to this objection, and wherever the soil is not otherwise rich enough to produce wheat, may be applied with decided advantage. We have so repeatedly given the component parts of various mixtures either of which may be used for this purpose, that it looks almost like a work of supererogation to repeat them. Nevertheless as there may be some of our readers who may be benefited by the reproduction of these formulas, we venture to insert them:

1st—250lbs Manipulated Guano, to be plowed lightly under before seeding.

2nd—6 two-horse loads stable manure, 2 bushels of refuse salt, 10 bushels of ashes, 5 bushels of crushed bones, plowed in.

3d—5 two-horse loads; 10 two-horse loads of marsh mud or woods earth, 5 bushels of wood ashes, and 1 bushel of plaster, compost layer by layer, let it stand two weeks. Shovel all together, broadcast and plow in.

4th—150lbs Manipulated Guano, 10 bushels of wood ashes, 1 bushel of plaster, 2 bushels of refuse salt—mix and plow under.

There are many others which might be given, but these will doubtless suffice. In preparing the seed, make a brine strong enough to float an egg. Pour the wheat into it, skim off all that floats on the surface—take out the grain and roll it in plaster preparatory to seeding it. Whether the seeding be broadcast or by the drill, which is better, do not put the grain at a less depth than from 1½ to 2 inches, and be careful to lay off water furrows to carry off the superabundant moisture.

From the Maine Farme.

PLASTER, AND THE WAY TO APPLY IT.

Mr. Editor:—Plaster should be ground fine and kept dry. It should be sown on grass lands in the spring, after the grass is from four to six inches high. The use of plaster consists in supplying sulphuric acid to dissolve the vegetable carbon, or leaf-mould, collected on the surface, and is more effective in a dry than wet season.

Plaster should not be put in the hill—because but a small part will be dissolved the first season, and if it could be, would give an unnatural stimulus to the roots. If one-fourth of a gill should be put into a hill of potatoes or corn, it would require four gallons of water to dissolve it, and if not dissolved, it produces no effect.

Try an Experiment. Manure a piece of land for potatoes or corn, and on one-half put the usual quantity of plaster in the hill, and on the other half put the same quantity in the following manner: When the potato tops are about half grown, take a common tin cullender that will hold about three gills, and take up about one gill at a time, and sift over the tops and hill, scattering it as much as possible. At harvest, note the difference in the product. If the season should be dry, and the potato tops present a yellow, sickly appearance, a very marked difference, a great change for the better, will be observable on that part of the field on which the plaster was applied above ground in a very few days.

As crops may, at times, be benefited by an application of plaster, in dry seasons, or in a dry time, in a wet one, wheat, oats, barley, and other crops, presenting a yellow, sickly appearance, indicate that they lack of carbon. By sowing one bushel of plaster to the acre, even as late as when the grain is in blossom, ten or twenty times the cost may be realized in the crops.

Plaster should not be mixed with manure—because manure is composed, when dry, of nearly pure carbon, and the active element of plaster is sulphuric acid—two elements as antagonistic as well can be. Heat results from the contact of carbon and sulphuric acid, even when the acid is diluted with 499 parts of water to one of acid. It should be applied, therefore to the roots of plants (living carbon) with knowledge, judgment and care.

Butter is improved by working the second time, after the lapse of twenty-four hours, when the salt is dissolved, and the watery particles can be entirely removed.

Horticultural and Pomological.

WILLIAM SUMMER, EDITOR.

MONTHLY TALK WITH OUR READERS.

The directions for last month may be followed in this, but as frost may be expected about the close of this month, but few seeds can be sown with safety. Amongst these may be mentioned Onions, Leeks, Parsnips, Early York, and other Spring Cabbages, which should be sown in beds where they can be protected. Look to the Garden, and see if there are spare places where Spinach and Lettuce can be sown, and attend to it. These crops will be valuable in winter, and if your garden is rich, as every garden should be, will receive no injury from growing these crops.

Prepare your Strawberry beds by deep spading, and enriching with good vegetable mould. A rich, deep, loamy soil, will generally be found to produce the largest and finest fruit, but a sandy loam is generally preferred. The soil must be deep and rich. Ashes, woods-earth, plaster, and a small quantity of salt, will be found admirably adapted for this object. When the soil is prepared to the depth of 12 or 20 inches the fruit will be less affected by drought.—This month will be found the best season in autumn for transplanting, although it may be delayed until the first of next month. The plants, when set, should be trimmed of all but two leaves, as they are usually sent out from the best Nurseries—the roots immersed in a mulch of good rich earth—and, if possible, a damp season should be selected for setting out, though, if one or two gentle waterings are given late in the evening, every plant will grow.—We have given a list in a previous number of the best varieties, but would again mention Albany, Longworth, Hovey, McAvoy's Superior and Walker, as among the best kinds. As this crop escapes the spring frosts, and is always abundant, a little labor now will put you in possession of many a delicious and wholesome repast.

Make preparation for planting Fruit-trees, which can be set out with safety the next month. Let these comforts cluster around your dwellings, so that your children may enjoy them freely, and you will have added to their pleasures, and in blessing others, contributed to your own enjoyment.

To Protect Cabbage from Catterpillars.—Having noticed the complaint of your correspondent, John, of Lynchburg, Va., concerning the catterpillar on cabbage, I would kindly suggest to him, to scatter a few seeds of the common hemp amongst his plants. Half-a-dozen hemps will protect an acre most effectually. E. F. T.

Gardener's Monthly.]

THE VINE-GROWER'S CONVENTION.

We attended the meeting of the Vine-Grower's Convention, at Aiken, and give a report of the proceedings, taken from the Charleston *Courier*, which will be found interesting. Much good was effected, and the Society has made a step in the right direction—and it is hoped that the meetings which are to follow will even prove more satisfactory. The display of Grapes, with which the Town Hall was decorated, was a superb sight, and we saw as fine specimens of the different varieties as we have ever seen grown, while many of the newer varieties were exhibited for the first time here. The Vineyards around Aiken, which we visited, give most encouraging promise to the Grape culture. The soil is dry and porous, thus rendering the labor of subsoiling unnecessary, though we are confident that this precaution would improve still further the Grapes, and not only add to the product, but make Wine of a better quality. We are still of the opinion that a mistake has been committed, in too closely following the system of close planting, pursued in Ohio, where Grape culture first received success; and that by giving greater distance and longer training the crop will be more abundant, and less liable to be affected by rot.

The Committee on the different varieties, and true names to be adopted, of the different Grapes, not being able to report before the close of the Convention, were allowed time. We had the pleasure of seeing it, and, as soon as published, will give it to our readers.

Much confusion had arisen from the same Grape being known by different names, in different localities; for instance, the Herbemont Madeira being known in this State and in the North under this name, while in Georgia and the Western States, it is known as the Warren. So with other varieties. A standing Committee on this subject will find something to correct for years to come.

Dr. Hume's remarks were well received, and proved highly satisfactory and interesting to all.

We must not omit to mention that in the report of proceedings as they appear, notice of the speech of Col. Yeadon, at the dinner, was omitted. It was one of the most appropriate delivered on the occasion. He expressed himself most happily, and confined his remarks wisely to the vine and its products. We regret not being able to give the substance of his remarks and his closing sentiment, but we were happy to learn that those from abroad appreciated it.

The number of delegates in attendance was greater than was expected, and upon the whole the Vine-Grower's Convention was a decided success; and we have no doubt that the result of its future labors will have a good effect, and that the production of a pure

and wholesome Wine will do mueh to reform the degrading habit of drinking, which pervades the eountry, while the growth of the vine will give employment, and bring into cultivation a portion of our eountry whieh is unfitted for the staple produets.—And the sentiment of Mr. Wm. Gregg may not be regarded as visionary but a true picture of the Future of Carolina.

TO CURE TETTER-WORM.

For the benefit of our correspondent, A. J. Hail, and others afflicted with this troublesome disease, we give a valuable recipe for Tetter, obtained from the venerated mother of Chief-Justiee O'Neall. We have known it tested again and again in the eure of this disease, and in Seald-head, with unvaried success :—Ed.

Take half-pint lard, the same quantity of poke-root shaved fine, the same quantity of Jamestown-weed leaves eut up fine (in the absenee of the leaves substitute two tablespoonfuls of seed bruised); fry this until the poke-root becomes erisp; then strain through a eloth, and add, when eool, one tablespoonful of sulphur and one of tar, and a teaspoonful of pulverized sugar of lead. To be used by rubbing in daily, having previously cleansed well with eastile soap. Buekskin gloves should be worn while the ointment is applied.

Three More Remedies.—1st. Take poke-root, boil a strong tea, then wash or bathe the hands 3 times a day, for 8 or 10 days, if necessary for so long a time to complete the cure, morning, noon, and at night. Make fresh tea every other day. I have never known this remedy to fail. It probably would assist the cure to wear gloves to keep the air from the hands while bathing.

2d. Blood-root or Pueeoon-root, steeped strong in good vinegar; bathe the hands two or three times a day, until a cure is performed. It will also cure Ring-worm on the face. The above is very good.

3d. Bathe the hands three times a day in Indigo dye—such as is made to dye with—this has been known to cure Tetter.

You have three cures—I think out of so many you may be healed of your Tetter, by perseverance. If the above remedies should, on trial, cure anybody, I shall be amply paid for my trouble in publishing it to the world.

Yours, Respectfully,

JAMES W. KEE.

ANOTHER REMEDY.

In the *Farmer and Planter*, of September, Mr. A. J. Hail wishes to know how to cure Tetter-worm, and having been very successful in relieving my neighbors of that very unpleasant affliction, I will give him the remedy I have used, and I have every reason to believe it will eure in *most* cases:

Take 3 ounees of the Bark of the White Ash, and 2 ounces of the root of "Queen's Delight," put them into a bottle of *good* whisky, cork, and let it stand a week. Take a tablespoonful three times a day, and wet the affeeted part eaeh time. Two bottles of this mixture, I believe, will eure the worst case of Tetter-worm. I have cured a ease of *twenty years'* standing with this simple remedy.

NO DOCTOR.

NEGLECTED FRUIT TREES.

Fruit trees are set out by millions every year.—The nurserymen of this eity alone send out eaeh year a million dollars' worth of fruit trees other nursery stoek. As a rule, the trees sent out are healthy and good; and yet how small a proportion ever live to bear fruit, or make profitable orehards? The principal cause of this is the want of previous preparation of the ground. Farmers will take pains to prepare their land for wheat and other grain erops, but fruit trees, intended for a permanent orchard, and involving eonsiderable expense in their purehase, are set out, with little thought or eare, on land which has reeeived no adequate preparation. Subsequent eulture may do something towards correcting this first and grand mistake; but it requires far less labor to prepare the land right in the first place, than to do so after the trees are set out.

Let all our readers, then, who intend to set out trees this fall, get the ground ready now. Not a day should be lost. If the site intended for the orehard is not entirely free from stagnant water, it must be underdrained. To determine this, dig a hole three feet deep. Then plow the land deep and well, and if subsoiled, all the better. This eultivation of the whole surfaee will be better than digging even the largest holes, and will save mueh time in planting.

If the soil is not rich enough, it is better to manure now than to apply the manure in the hole at the time of planting. This, in fact, should never be done.

For the first few years after the trees are planted, cultivate nothing but hoed erops. The use of the plow and cultivator will keep the soil mellow and moist. The difference in appearanee of trees growing on land that is eultivated during the summer, and on that whieh is in grass or grain, is most striking, espeeially in the case of peaches.

It requires no partieular skill to raise our ordinary fruits. Every farmer might have them in abundanee; but he who hopes to be successful must abandon the idea that fruit trees will flourish in grasses or grain.—*Genesee Farmer.*

Sugar for Diarrhœa—Drs. Behrend and Sieber reeommend the medicinal use of sugar as a curative means of great value in diarrhœa—one in a child aged four years—in which half an ounce of powdered white sugar given every hour, soon gave a favorable turn to symptoms of extreme gravity, which had long resisted all the ordinary means of cure. Other evidence of a similar character is promised, and it is believed that there are many conditions of diarrhœa, particularly those in which there is a putrefaction in the secretions, where sugar will in all probability prove a most valuable remedy.

VINE-GROWER'S CONVENTION.

AIKEN, Aug. 21, 1860.

At 12 o'clock M., on motion of Col. W. P. Finley, the meeting was called to order, by the appointment of Mr. H. W. Ravenel as temporary Chairman to organize the Convention, and Thomas E. Chapman was appointed Clerk.

Delegates present not members of the Aiken Association were requested to enroll their names, and are as follows:

J. L. Moultrie, Alabama.	P. W. Printup, Georgia.
J. P. Rogers, Alabama.	J. B. Hart, Georgia.
Dr. N. Hackworth, Ala.	W. K. Nelson, Georgia.
Robt. Nelson, Alabama.	J. Bracc, Georgia.
A. C. Hege, North Carolina.	Wm. Schley, Georgia.
Wm. Summer, S. Carolina.	R. D. Walker, Savannah.
H. B. Rice, South Carolina.	Jno. M. Cooper, Savannah.
J. M. Miller, S. Carolina.	J. M. Nunez, Columbus, Ga.
J. H. Lamar, S. Carolina.	W. S. Dudley, S. Carolina.
Thos. K. Legare, So. Ca.	Ed. McIntosh, S. Carolina.
Harpin Riggs, S. Carolina.	Dr. Wm. Hume, So. Ca.
Dr. E. J. Mims, S. Carolina.	Dr. J. S. Woodruff, So. Ca.
F. E. Flory, South Carolina.	Eugene Merrier, So. Ca.
Adolph Stark, S. Carolina.	Geo. C. Mackay, So. Ca.
M. J. Kirk, South Carolina.	N. P. Crowell, S. Carolina.
J. W. Jones, South Carolina.	T. Y. Bolon, S. Carolina.
Dr. Cook, South Carolina.	Jacob Stroman, S. Carolina.

The Chair, after registration of names by delegates, delivered the following:

Gentlemen of the Convention:—We bid you welcome to Aiken, in behalf of our Vine-Growing and Horticultural Association. We have invited you to meet together at this place for consultation, as those having a common interest, and it is a matter of congratulation that a business, which bids fair to improve our condition, not only in a pecuniary, but I may add also, in a moral point of view, should have merited so much attention.

Vine-growing and Wine-making are beginning to be important objects of rural economy, and I have no doubt are to be, in time, very material elements of national prosperity. It is a new business in our country, and, as in all other new enterprises, there is a necessity for concert among those who should act together.

After repeated failures by those who, as pioneers, introduced the Foreign Grape from Europe, for Vineyard purposes, there is now a settled conviction that we must rely on our native varieties for extensive planting and for Wine-making. Of these, large numbers have been brought into notice of late years, and new and improved varieties are annually added to the list.

If, then, we are to rely upon our native Grapes, it is of the first importance that we should know the qualities of those various kinds from which we may select, both for the table and for Wine-making.—Under the direction of the Patent Office, a series of analyses have been made by Dr. Jackson, of some thirty-eight kinds, grown in this country. These analyses exhibit the amount of saccharine matter contained in the juices of the different Grapes, and, of consequence, the amount of Alcohol which would be formed during fermentation—those containing the greatest per centage of saccharine matter, and therefore furnishing the most Alcohol, being the best Wine-Grape.

But it is evident that after ascertaining the qualities of these Grapes, if we have no constant name by which they may be universally known and designated, we shall still be groping in the dark. Every one who has paid attention to Grape culture, must be sensible of the fact that there is much confusion in the nomenclature of our American Grapes (I allude to the varieties—the species are few, and have been thoroughly investigated and determined by the best botanical authorities). If this is allowed to go on, each year increases the difficulty, as new kinds are annually added. In some cases, new names are given to varieties which had been previously known. In other cases, we have the same Grape called by different names, or different Grapes called by the same name in different localities. In a few instances, the origin of some of our most valuable Grapes has been brought into question, whether they be native or foreign stock.

With respect to the qualities and classification of American Wines, there is much yet to be done.—Climate and soil must have their effect upon the saccharine qualities of the Grape; whilst difference of treatment during the process of fermentation, may produce a different Wine from Grapes of the same locality.

To elucidate these matters, which are of importance to the Vine-growers, we have thought that a consultation by those interested, and a comparison of specimens from various localities, would offer the most effectual mode. For this purpose we have invited a meeting of the Vine-growers of the United States, in this place, and at a season when the fruits and specimens of Grapes can be best secured.

We give you a cordial welcome, and trust that your consultations may be crowned with satisfactory results, and thereby give an impetus to this new and vigorous element of national prosperity.

On motion, a Committee of five, comprising Col. W. P. Finley, A. DeCaradeuc, Wm. Summer, D. Redmond and N. P. Crowell, was appointed by the Chair to nominate permanent officers for this Convention, who, after a short intermission, reported Hon. James H. Hammond, for President; A. C. Hege, of North Carolina; J. L. Moultrie, of Alabama; J. B. Hart, of Georgia, and Dr. McDonald, of South Carolina, for Vice-Presidents, and Samuel Langley, Thos. E. Chapman, and Manning J. Kirk, of Bluffton, South Carolina, Secretaries.

On motion, the Chair appointed Col. Finley and A. DeCaradeuc a Committee to escort the President elect to the Chair, who, on assuming the same, stated he was more than pleased at the honor unexpectedly conferred upon him, and especially at the display of fruit exhibited before the Convention, on the present occasion. He said that he was about this very day to embark in expressing his own Grapes at home, which were fully ripe. But he felt so deeply interested in the movement going on in an adjacent vicinity, that he determined to forego the gratification of his own feelings, in expressing his own Grapes, to witness efforts made and making in an adjoining neighborhood. He was gratified he had done so.

The exhibition of this day, and the presence of these Delegates, indicated that an interest in behalf of growing our own Vineyards and manufacturing our own Wine, was extending—and inasmuch as we had Delegates from Alabama, Georgia, North Carolina and South Carolina, it indicated that a large belt of waste lands, capable of growing extensively these fruits, was now about to engage the attention that should have been called to them hitherto. Nay,

more; the exhibition of this day, he ventured to say, could not be surpassed by any part of the world, and in using this brave expression, he did it without qualification: especially so in reference to the variety and quality of grapes here to be seen.

He urged the assembly to go on in their laudable efforts, as he remembered that when he first tasted the native Wine, manufactured some ten years past, it was such worthless stuff that he thought it would be impossible to acquire the art so as to successfully manufacture Wine. Now circumstances have changed, specimens of good home-made Wine are to be found at different points. He had the honor to exhibit here to-day, two bottles that he thought would not prove unpalatable even to connoisseurs. He hoped that this Convention would give such an impetus to this enterprise as that it would continue to be developed, until we become perfectly independent of all foreign Wines. Gentlemen of the Convention, in assuming the duties of the Chair, I advise you to emulate each other in fostering this enterprise, and you will find that harmony of action in this, as in every other effort will ensure you success. The Chair is now ready for the business of this Convention.

Mr. DeCaradeuc then moved the following Resolutions:

1st. That a Committee of ten be appointed by the Chair, with instructions to inspect the Grapes brought for exhibition; compare the different specimens, and to ascertain their several names, if such they have, in the different parts of the country; to classify them under their respective heads, and to prepare for the acceptance of Vine-growers the most approved names of each.

2d. To ascertain the present state of maturity, the quality of the different varieties, their adaptation for Wine, Brandy, the table, or for raisins; their liability to rot, mildew, shed off, or remain unripe, in different parts of the country; and to ascertain, as far as possible, the origin of each variety.

3d. To report on the above as early as possible, and should they not be prepared to report before the adjournment of this Convention, the Chairman of this Convention be, and is hereby authorized, to have five hundred (500) copies printed for distribution; and also to have said report published, at the request of this Convention, in several of the Horticultural journals.

Messrs. H. W. Ravenel, Chairman; A. DeCaradeuc, A. Stark, J. L. Moultrie, P. J. Berkman, D. Redmond, R. Nelson, J. W. Jones, Dr. McDonald, and V. LaTaste, were appointed a Committee on the foregoing Resolutions.

Resolved, That a Committee of five be appointed by the Chair, to examine and report upon all other Fruit exhibited.

The Chair appointed J. H. Cornish, Chairman; Wm. Summer, Jas. Purvis, Richard Yeadon, and W. G. Wood, on this Committee.

On motion of J. H. Cornish, the Chair appointed J. H. Ladson, Col. Jas. Legare, J. J. Gregg, J. H. Lamar, and Alex. Mazyck, a Committee to examine and report upon Wines exhibited.

On motion of Jas. B. Hart, Esq., the Hon. Jas. H. Hammond, President of this Convention, was appointed Chairman of this Committee.

On motion of Wm. Gregg, Esq., it was

Resolved, That when this Convention adjourns, it adjourn to meet at the Baptist Church to-morrow, at 10 o'clock, A. M.

A communication, accompanied with a specimen of Grapes, presented by Mr. Jas. B. Hart, was, on his motion, referred to the Committee on Grapes.

On motion of Col. Finley, a leter from Mr. Francis Bulekley, of Richland, (who presented a specimen of Seedling Grapes,) was also referred to a Committee on Grapes.

On motion, Convention adjourned.

Aiken, Wednesday, Aug. 22, 1860.

The President having taken the Chair, on motion of Col. A. P. Aldrich, the Convention was organized by requesting Rev. Dr. Bachman to open with prayer. He having prefaced the same by a few remarks, in the course of which he indicated that he had no objection to ask the Divine blessing and aid in the manufacture of the pure, unadulterated juice of the grape, which was given by God, in common with the fruits of the earth, for the use of man, and were in and of themselves good. But he could not ask the Divine favor upon an admixture of Alcohol and juice of the grape, which was a pernicious admixture devised by man, adulterating what was in and of itself good, and intended for his use, thereby vitiating and impairing a blessing to unhallowed and pernicious purposes, and converting what was intended for man's good into a baneful and pernicious evil, that would enervate and debase him (if the use of it was persisted in), to a condition excessively demoralizing.

He urged the Convention to oppose their weight and influence against any such adulterations, so as to give back to the world a beverage both grateful and healthful—one that could be relied upon, and which would tend to banish from consumption the spurious and corrupt compounds that are vended for Wines. After which, the Rev. Doctor opened the Convention by prayer.

Mr. Chapman, one of the Secretaries, then read the proceedings of the Convention of the previous day, which were approved and confirmed.

Mr. Langley offered the following resolution:

Resolved, That all motions and resolutions submitted to this Convention shall be in writing, over the signature of the mover, so as to facilitate the business thereof, and for the convenience of the Secretaries.

Adopted.

On motion of Mr. Purvis, Mr. Jacob Stroman was requested to take his seat on the platform as Vice-President.

By the Chair. The Vice-Presidents generally were requested to occupy their seats.

By the Chair. Committees were called on for reports. The Chairman of Committee on the Grape and on Wine requested further time.

Granted—and these Committees, by permission, retired for further consultation.

Mr. J. Cornish, Chairman of Committee on Fruits, submitted the following report:

That the object of this Convention being generally understood to be the consideration of the Vine and its products, the number of contributors of Fruit, other than the Grape, is small.

Your Committee have limited their comments to a brief note of the condition and character of the specimens presented, except in case of new or unknown varieties.

Mr. P. J. Berckman, of Augusta, Ga., presents

thirty-seven varieties of Apples: Buff, Romanite, Disharoon, Calujujah, Male de Carlo, Queen, Logan Berry, Never-fail, Westfield's Seek-no-further, Baldwin's, Talloa, Baltimore, Brabant Bell-flower, Smith's Cider, Fall Pippin, Cullasaga, Nickajack, Julian, Dodge's Crimson, Roxbury Russet, Bell-flower, William's favorite, Palo Alto, Habbarston's Nonsuch, King Tom, Pophanni's Green, Selma, Bradford's Best, Horse, Amos Jackson, Rhode Island, Pennsylvania Pound, Lever, Winter Pearmain, Junaluskee, Dutch Mignomee.

Mr. James Purvis presents a Seedling, small, good, worthy of general cultivation.

Mr. P. J. Berckman presents twenty-two different varieties of Pears, viz: Vicar of Winkfield, Seedling No. 18, Epine Dumas, Beurre de Brignais, White Doyenne, Zephirin Gregorie, Roitelet, Van Mon's Leon Leclec, Bartlett, Flemish Beauty, Triumphe de Jodoigne, Duchesse d'Angoaleme, Bezy Sans Parail, Beurre Burnicy, Beurre Gris d'Livrei Nourcau, Crouch, Laure de Glymes, Cantaloup, Marie Louise, Onondaga, (20 varieties,) and Steven's Genesee.

Messrs. J. M. Nunez & Co., of Columbus, Ga., contributed one variety, viz: Bartlett.

Mr. E. B. Heyward, of Richland District, S. C. contributed two varieties, viz: Bartlett, Beurre Clajeau.

Mr. Ed. McIntosh, of Society Hill, S. C., contributed one variety: Bartlett.

Mr. D. Redmond, of Augusta, Ga., contributes a basket of extra large Pomegranites, beautiful.

Mr. P. J. Berckman, of Augusta, Ga., Mrs. Allison, J. G. Steedman, Miss Timmonds, Mrs. Mary A. Roach, Mrs. Guiton, and Mr. Jas. Purvis, of Aiken, S. C., and J. J. Gregg, of Vaucluse, S. C., have all contributed Peaches.

On the fruit stand, we observe some Haw and Plum Jelly, from Mrs. Finley, very fine; and Peach Leather, not to be excelled. Also, superior and very beautiful Haw and Apple Jelly, from Mrs. Yeadon.

Delegates who had not yet enrolled their names were now requested to come forward and register the same, and Dr. Mays, of Florida, Jno. J. Guignard, of South Carolina, E. L. Patterson, of Sabine, La., Wm. M. Hunter, of Barnwell, S. C., and A. P. Aldrich, of South Carolina, did so.

On motion of Col. Yeadon, Dr. Wm. Hume was requested to address the Convention, and the Professor responded by a very able, intellectual and scientific speech, which commanded the undivided attention of the Convention.

He stated that he owned no vineyard—that he cultivated no grapery—but that he took an abiding interest in efforts making to establish vineyards in the South; that there was no reason why success should not attend those efforts, if patience and perseverance accompanied them; that nothing in this life could be attended with success without patient and indefatigable labor. Close application and minute observation was necessary in making Wine. That while others were working in the vineyard and at the Wine press, he was just as diligently employed in the laboratory in solving the great problem of manufacturing good pure Wine. Others had solved it in Europe, and what had been learned elsewhere, could and should be learned in this country. Analysis had perfected them in the art, because it gave them to understand the elements of Wine. Analysis can likewise be our schoolmaster, and teach us also the constituents. Why not? In his researches he had learned a great deal. He had yet a little more to learn, in order to get his lesson perfectly. What he asked the Convention for, was, to assist him in his lesson, by furnishing him with a cluster of grapes, now and then, in different states of maturity, from their respective vineyards, that he might take them into his laboratory, and submit them to rigid analysis; and also send him a few ounces of their grape juice from the press, that he might examine it in like manner.

He had already, by research, learned enough to receive offers from Wine merchants of New York, to buy up every gallon of expressed juice that could be manufactured in South Carolina, the agency for which had been tendered him. But he does not see the necessity of manufacturing Wine in South Carolina to be shipped to New York for the Wine merchants of New York to take to their cellars to be doctored up and manufactured, bottled and shipped back to us, an impurer article than we let them have, at from three to five, or ten times the price than they bought a purer article from us at. He thought it far better for us to learn ourselves to manufacture a good, pure article of Wine at home, for our own consumption first, and after we had done that, then if New York wanted the excess, and would pay us a good price for it, well, in the name of common sense, let them have it; or, if we can find a better purchaser, let our surplus Wine seek the best market.—Mr. Hume contended that if the Wine wanted body, we must supply Alcohol—good, pure Alcohol—not the filthy Brandy, concocted of chemical substances, and colored with Logwood and Cochineal. We wanted no Sugar of Lead, nor Oil of Turpentine, nor Oil of Juniper, nor Strychnine, nor any other villainous compound. We had the pure juice of the Grape, and science would ultimately teach us how to correct existing difficulties. If our Wine lacked sweetness we could easily add a little pure rock candy.

By analysis he had ascertained there was an excess of tartaric acid and impure tartrate of potassium. Give him a little more time, and a little more experience, and he doubted not he would learn to overcome this inconvenience. He here gave us several atomic analyses, but as the report of this part of his remarks requires minute accuracy, we forbear entering upon a detail of these. We the more cheerfully relinquish this part of our labor, as the Professor has very kindly promised the Convention, that as soon as he carried his researches to satisfactory results, he would publish them for the use of the South.

Mr. Yeadon called Dr. Hume's attention to a remark of his, that he had found a bunch of Grapes, sent him from Augusta, that was riper than any he had received from the vicinity of Aiken, and that he thought would make a very good Wine. Whether he understood him to convey the idea that Grapes in the vicinity of Aiken would not make a good Wine?

Mr Hume replied: The Wines of Aiken were too acid, but it may partly be from expressing the juice of grapes not well ripened; there was too great an excess of tartrate of potassium. (Here he again entered the subject of atomic analysis, which we omit, for the reason assigned above.) He, however, stated a very simple mode by which each vintner might test his own juice from the grape, viz: take several small vials, wipe them perfectly dry and weigh them, marking the weight of each vial carefully; then add to one of the vials one or two ounces of water—one

ounce was quite sufficient. Weigh this vial of water again, deduct the weight of the empty vial from the weight of the vial of water, and your result will be the weight of the water, or, in other words, its specific gravity. Thus, if the empty vial weighs 130 grains, and the vial of water weighs 1130 grains, deduct 130 as the weight of the vial from 1130—the weight of the vial of water—and we have 1000 grains as the specific gravity of water. Now, if 1000 grains is the specific gravity of water, and water the basis by which you compare the specific gravity of the juice of the grape or Wine, then it follows, if one ounce of Wine weighs 1006 grains, the additional six grains must be referrable to something else, which renders the Wine more ponderable than water, and that something else, chemical analysis has taught him, is impure tartrate of potash. This, for all common purposes, is a sufficient test for the vintner.—Analysis must do the rest.

Mr. Yeadon also asked why the Doctor classified the juice of a Catawba Grape, from Augusta, Ga., as containing more saccharine matter than the Grapes of Aiken?

Prof. Hume.—This may be owing, in part, to the immaturity or unripeness of the one specimen, and the maturity or ripeness of the other specimen.*

* The writer of this report would like to know whether vegetable chemical assimilation in and from a high and dry soil, would not be accelerated by heat, and thus generate greater acidity than a loam soil on the bank of a stream, where the water, percolating through the soil, and thus keeping the roots of the vine cooler, retard the circulation of sap, and lessen the tendency to acidity?—Also, whether a high dry soil or a loam would yield most potassium to the vine?

Would it not be advisable for every vintner, in addition to his Wine press, to get him a small still, to distill the residuum or must into Brandy, and to preserve the impure tartrate of potass for commerce?

(CONCLUDED IN OUR NEXT.)

FINING WINE.—*Messrs. Tucker:*—A very long experience in the wine trade enables me to say to those of your readers who are making wines of any sort, that the whites of eggs are superior to any other fining. They should be entirely separated from the yolk—beat only so as to separate them, and not to the *frothy* condition prepared for cake-making.—Three or four whites to a quarter-cask, adding the shells pulverized fine, and a tablespoonful of fine salt; mix these well together in a gallon or more of the wine, pour this into the cask, and see that your measure holds back none of the fining; then give it a thorough stirring from the bottom with a stout stick, put in at the bunghole. If you have *more* shells, it will be beneficial to use them, especially if the juice appears to partake of strong vinous acid. The eggs should be fresh, and if the first fining fails, give it a second one, but do not stir from the bottom, or let your stirrer go more than half the depth of the cask; the bung should be left loose, a faucet put in the head of the cask, and after a while, by a sudden turn of the faucet, a little of the lees drawn off for a few times, and at intervals of some days, until it appears bright in a glass. If the process of fining is very tardy, a small quantity of brandy poured gently in at the bung, and stirred on the surface of the juice, sometimes aids the precipitation of lees.

E.

From the Gardener's Monthly.

GREENHOUSE.

It is a very good time to look around for soil for potting purposes. The surface soil of an old pasture forms the best basis, which can be afterwards lightened with sand, or manured with any special ingredients, to suit special cases, as required. The turfy or peaty surfaces of old wood or bogs also come very "handy." A stock of moss should also be on hand for those who crock pots, in order to cover the potsherd; moss also comes in useful for many purposes connected with gardening, and should be always on hand.

Plants intended to be taken from the open ground and preserved through the winter, should be lifted early, that they may root a little in the pots. A moist day is of course best for the purpose, and a moist shady place the best to keep them in for a few days afterwards. Anything that is somewhat tender had better be housed before the cold nights come.—Some things are checked without actual frost.

Those who have greenhouses, pits or frames, will now see to having any necessary repairs attended to. White-washing annually is serviceable, destroying innumerable eggs of insects in the war against which the gardener should always take the initiative; sulphur mixed with the white-wash is also serviceable. Powerful syringing is a great help to keeping plants clean, and should be frequently resorted to.

Propagation of bedding plants for another season, will now be progressing actively. Geraniums, and other things with firm wood, do best in sand spread on the open ground, with a glass frame partially shaded spread over it. A great benefit will be found in most cuttings if they are placed for a short time in slightly damp moss for a few days before inserting in the same, so that the wound at the base of the cutting may be partially healed or calloused over.—Verbenas, and such cuttings, can be kept but a few hours, unless the wood is very hard. The harder the wood the longer will they do to keep so. Ripe wood of some things will be benefited by keeping two weeks. All this must be found out by each propagator himself.

Ornamental annuals for winter flowering should be at once sown, not forgetting Mignionette, to be without which will be an unpardonable sin. Chinese Primroses, Cinerarias, Calceolarias, Pansies, Polyanthus, &c., should all be sown. Winter-blooming Carnations and Violets should not be forgotten.—They are now essentials in all good greenhouse collections. The Calla Ethiopica, old as it is, is an universal favorite, and should now be repotted, when it will flower through the winter finely. Oxalis, Sparaxis, Cyclamens, and such Cape bulbs that flower through the winter, should be repotted now.—They are an easily grown tribe of plants, and should be in more favor. This is emphatically the Dahlia, as the next is to be the Crysanthemum month. Dahlias have not grown much through the drought, and better not; now that September has come, they should be stimulated to grow, by copious waterings, and fine flowers will be the result.

FOR CLEANING SILK.—Take equal quantities of alcohol—whisky will do—soft soap, made of wood-ashes, and molasses. Mix and rub with a cloth; afterward rinse in clear water once or twice, and dry it or wrap in cloth till ready to iron.

DIGGING AND PRESERVING POTATOES---INQUIRIES, &C.

Mr. Editor:—In the May number of the *Cultivator*, I see that one of your correspondents, "Sprueewall," is desirous of information on two particular points, in reference to the following: He wishes to know "*the best and most propitious time for digging potatoes: also, the best plan for preserving them in a cellar.*"

I have had some considerable experienee in this for a number of years, and have been successful to all intents and purposes, and gladly avail myself of this opportunity to let the gentleman and the public know my *modus operandi* of preserving this valuable crop. My potatoes do not rot, neither do "pilferers lessen their quantity," but on the eontrary, I have them perfectly sound and sweet, the year round, from fall to fall.

I never dig until the vines are killed by the first falling frost; the potatoes are then fully matured, and ready for harvesting. I find that if they be dug too early they are apt to rot, owing, in part, perhaps, to the superabundanee of sap whieh they then contain. I would advise, however, that they should not be permitted to remain in the earth too long, after cold weather has fairly set in. If they get frost-bitten, or remain in the soil, when it is sufficiently eold to freeze it, they eannot otherwise than get materially injured, as every farmer has attested. Neither should they be suffered to lie dug on the ground, after night-fall, if the frost be any way eonsiderable. Some dig too early, others too late; this should be done as soon as the potatoes are matured, which will be the ease when the vines are killed.

"Sprueewall" seems to be well versed, according to his own showing, in the "hill system management," so I shall forego offering any remarks on this point.

I build my cellars in the following manner: Dig a square pit two feet in depth, if the situation is not too low, then sommenee at the bottom on either side, and rear up the walls, whieh I generally build of hewn poles, having those beneath the surface of pine heart. After the body of the cellar has been raised to the desirable height, lay a tier of joists on the plates from one end to the other, in close approximation, over which plaee a layer of straw, and over this a stratum of elay, and over this build your roof or cover, similar to that of any other cabin; then build a snug door, and fill well the interstices with clay, so as to make air-tight, and your cell is completed. There should be placed no straw, or anything else, exeept potatoes, on the bottom of it. Put them in as dry as possible, *and open the door afterwards occasionally, when the weather is fair, and the atmosphere divested of dampncss.*

Again: I have another plan of preserving them, whieh, if possible, is superior to the above. Build a snug box out of planks, and put it in any common tight house, where you can sparc it the room. Keep your potatoes in hills, until about the first of April, then take them out, and put them in the box, mixing well with dry sand. This will keep them from sprouting, steaming, fermenting and rotting, preserving them dry, sweet and sound, all the summer round.

The above modes I have well tested, and if any man believes he ean beat me on "*taturs*," let him call at my table, and he shall have ocular demon-

From the Country Gentleman and Cultivator.

CULTIVATION OF THE PEA-NUT.

Messrs. Tucker:—I see by the 4th number of the present volume of the *Country Gentleman*, that a eorrespondent wishes to have some information respecting the cultivation of the pea-nut. As I have some little experienee in the eultivation of this article, and lest some more experienced hand should negleet to supply the desired information, I shall state what I know on the subjeet.

The article is called by a variety of names in this part of the eountry, such as *pea-nut*, *ground-pea*, *pinder*, *gowber-pea*, *&c.* The ground should be rieh and well broken up. It ought to be of such a deseription as might be expeeted to produce a good erop of corn. It ought to be laid off in ridges about three feet apart. A shallow furrow run with a small plow along the centre of each ridge prepares the ground for the seed. The pods whieh eontain from one to three peas each must be broken, and the peas planted in the drill from one foot to eighteen inehes apart, and eovered with a hoe about one ineh and-a-half deep. They ought to be plowed and hoed three times during the season, to destroy the weeds and keep the ground loose. The pea vine while growing sends up a perpendicular stem about a foot high; about this stem many others shoot out in all direetions, and run about fifteen inehes along the surfaee of the ground. These runners have joints about an inch and-a-half apart. At each joint a strong root strikes down into the ground about two inehes deep; at the end of this root the pea-pod is formed, and there eomes to maturity. Some farmers eover these lateral vines with earth, while others leave them bare all the time. It is not agreed whieh is the better mode. When ripe, one bunch of vines will have from one to two quarts of peas. Some planters eultivate them in hills like corn, but I prefer drills.—One aere will produee from thirty-five to fifty bushels of peas, which usually sell at $1 per bushel in our markets. Joseph McKee.

Common Salt, a Remedy for Insects.—Professor Mapes states, that eommon salt, applied to the soil, will do away with every grub, wire-worm, or other lesser insect, so destructive of eorn, and other vegetables.

He applies it as a top-dressing, in the proportion of about six bushels to the acre. He says:

"I apply that quantity every year to every acre of my land; and since adopting this practiee, I have never lost a plant by grubs. My neighbors, who are afraid to try salt, continue to lose theirs, and are compelled to buy my eabbage and other plants, to re-set their beds."

Its value as a *fertilizer* is also worthy of eonsideration. It is eomposed of chlorine and soda, and these ingredients are defective in many soils. It also has the property of attracting and retaining moisture, as well as ammonia and other gases, which add to the fertility of the soil. Our farmers ean easily test it in a small way, by proeuring the *refuse salt* of paeking houses; or it will not be a very expensive experiment to proeure even fresh salt for the purpose.

Cookies without Eggs.—Two teacupfuls of sugar, one cupful of butter, one teacupful of cold water, one teaspoonful of salaratus, spiee to the taste. Mix stiff, roll thin, and bake crisp.

SPINACH CULTURE.

In the cultivation of all plants, which are useful or desirable on account of their succulent leaves, two things are essential to success. The first is, a soil that is not only rich, but in thorough tilth; that is, having depth and pulverization. The second is, to keep it in this condition. September is the month to sow spinach. That sown in the early part of this month will be fit for use late in October. For the principal or spring crop, the seed should be sown the last of September or early in October.

The best method, I think, is to sow in drills. Lay out the ground in beds four feet wide, which divide into drills of ten inches apart, and about half an inch deep, Drop the seed thinly and cover evenly. It is advisable to roll or press the drills, if the ground is dry at time of sowing.

When the young plants appear, which, in good weather, they will do in about ten days, they should be thinned out to the distance of three or four inches apart. Never let the plants crowd each other, if a good vigorous crop is desired. Spinach, like Young America, must have room to spread itself, or the stalks will be spindling and the leaves small. Be careful in hoeing not to cover the heart of the plant with earth.

Where spinach is grown for family use only, and where it is desirable to have not only strong healthy plants, but tender and succulent ones, they should be watered in dry seasons. If this is not attended to, it will be found that the whole top of the plant will be hard and dry.

As spinach, in the spring of the year, is a dish generally well liked, the foregoing directions, which are based upon practical experience, may prove of service to some of our readers.

It should have been stated, that a light covering of straw is almost indispensable through the winter. It should not be so heavy as to press the plants to the earth, and yet thick enough to shelter it from the severities of the winter. This will greatly improve the condition of your beds in the spring. For spring sowing, sow the round-leaved, or *round-seeded*, and the *prickly-seeded* for fall sowing and winter and spring crops.—*Farmer and Gardener.*

Yield of Milk from Ayrshire Cows.—A prize of ten pounds ($50) was offered, by the Duke of Athole, for the cow which should give the largest quantity of milk in five days. Eight cows were sent for trial to the appointed place, near Ayr, Scotland. No restrictions were made in regard to food, except that the cows were not allowed to have milk given them.

The best cow gave 263lbs of milk in five days, or 21 quarts per day. The greatest quantity given in a single milking was from this cow—28½lbs, or 11½ quarts.

The average yield of the four best cows was about 48lbs, or 19 quarts per day.

The trial took place last April, before the cows were turned out to grass. The *Ayr Advertiser* says, that "the cow which gave the largest quantity of milk, at the Duke of Athole's competition, improved wonderfully in the amount of produce after she was put on the grass. She lately gave the astonishing quantity of 75 imperial pounds, or 7½ imperial gallons, of milk per day, for several days in succession. The largest quantity at one milking was 39lbs."—(15½ quarts.)

Domestic Economy, Recipes, &c.

Saltpetre for Throat Complaints, &c.—I see an article going the round of the newspapers headed "Cure for Bronchitis," recommending what has long been known as a remedy for internal throat complaints. It is an almost certain supplanter of quinsy, taken in the first stages, as recommended for bronchitis. For scrofula, king's evil, and complaints arising from impure blood, it is a sovereign remedy, and I know no better ready relief for sore eyes than common nitre or saltpetre. I have known of many, by doctors declared incurable, both in king's evil and inflammatory eyes, completely cured by using this remedy twice or thrice a day. A piece about the size of a marrowfat pea is sufficient for a dose. The best mode of taking it is to let it lay as far back on the tongue as possible, and let it dissolve of its own accord. W. M. Beauchamp.

Country Gentleman and Cultivator.]

Tomato Catsup.—To a half-bushel of skinned tomatoes, add one quart of good vinegar, one pound of salt, a quarter of a pound of black pepper, two ounces of African cayenne, a quarter of a pound of allspice, six onions, one ounce of cloves, and two pounds of brown sugar. Boil this mass for three hours, constantly stirring it to keep it from burning. When cool, strain it through a fine seive or coarse cloth, and bottle it for use. Many persons omit the vinegar in this preparation.

To make crisp gingerbread, take two cups of butter, two cups of molasses, one cup of sugar, teaspooful of soda dissolved in four tablespoonfuls of milk, and two tablespoonfuls of ginger; flour to make it stiff enough to roll out; roll it out very thin on buttered tin sheets, and mark it in squares, and bake in a quick oven.

To Get Rid of Mosquitoes in the Night.—Mosquitoes, says somebody, love beef blood better than they do any that flows in the veins of human kind. Just put a couple of generous pieces on plates, near your bed at night, and you will sleep untroubled by these pests. In the morning you will find them full and stupid with beef blood, and the meat sucked as dry as a cork.

To Preserve Pumpkin.—Take good, ripe pumpkins, pare, and stew as dry as possible; place in the oven on a sheet, and let it remain until thoroughly *dried*, not *baked;* then stow away in a dry place, when it will keep an indefinite length of time—only requiring to be soaked in milk a few hours before using.

Stewed Tomatoes.—Slice the tomatoes into a tinned sauce-pan; season with pepper and salt, and place bits of butter over the top; put on the lid close, and stew twenty minutes. After this, stir them frequently, letting them stew till well done; a spoonful of vinegar is an improvement. This is excellent with roast beef or mutton.

Pie-crust.—One quart of flour, three-quarters of a pound of lard; put in half the flour to half the lard, and with water knead until smooth; roll it out thin three times, touching it each time with the lard, sprinkling it with flour, and roll it up to be rolled again.